



INDIAN ARMED FORCES YEAR BOOK - 1955

Edited by
JASWANT SINGH

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The advertisement is a black and white illustration. At the top left is a decorative crest with a shield containing a diamond shape. To its right, the word "Quality" is written in a large, elegant script. Below the crest, a figure is depicted in a dynamic pose, possibly a jester or a dancer. To the right of the figure, the phrase "You can trust" is written in a similar script. In the center is a detailed illustration of a glass Coca-Cola bottle. To the right of the bottle is an oval-shaped library stamp that reads "LIBRARY" and "DIEBART" with a space for "AC. NO.". Below the stamp is a circular emblem with the text "Drink Coca-Cola In Bottles". The entire advertisement is framed by a simple border.

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You can trust

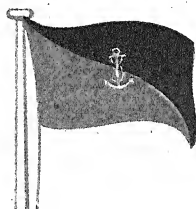
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PREMIUM INCOME :

	Rupees
Life Department	5,61,90,564
Fire Department	2,50,30,833
Marine Department	1,00,70,202
Miscellaneous Department	85,52,522

FUNDS :

	Rupees
Life Assurance Fund	23,91,60,262
Fire Insurance Fund	1,68,00,000
Marine Insurance Fund	1,41,75,000
Miscellaneous Insurance Fund	62,00,000

LIFE BUSINESS :

	Rupees
Written during the year	43,42,43,041
In Force at end of year	1,25,29,42,079

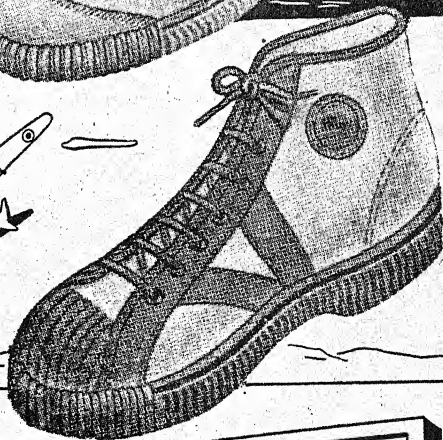
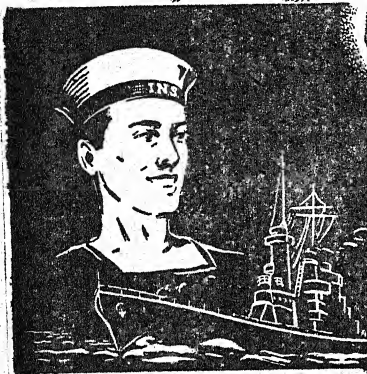


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By the love, innate in all men and women — we bear to the country that gave our parents birth and will be the home of our children;

By the hatred — innate in all men and women — we bear to evil, injustice, usurpation and arbitrary rule —

By the aspiration that thrills our souls towards that liberty for which it was created for which it must exert, towards the good it was created to strive; and must achieve—

By the memory of our former greatness and the undying desire to hold and enhance it —

By the tears of all Indian mothers for their sons dead on various battlefronts —

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ACKNOWLEDGEMENTS

WE ARE MOST DEEPLY INDEBTED TO

H. H. Yuvaraj Bhadur Karan Singhji, Sadar-e-Riyasat, Jammu and Kashmir, for the moral and material encouragement that he was pleased to give us right from the planning stage to the completion of this project.

Honourable Dr. Kailash Nath Katju, Minister for Defence, General Maharaj Rajindersinhji, former Chief of Army Staff, Admiral Sir Mark Pizey, former Chief of Naval Staff, and Air Marshal S. Mukerji, Chief of Air Staff for honouring the publication with their personal blessings messages.

Bombay Congress Chief Shri S. K. Patil, President of Indian Merchants Chamber, Shri Babubhai M. Chinai, and nation's top business magnate Shri Naval H. Tata for their personal blessings messages and moral and material encouragement in other respects.

The Press Information Bureau, Government of India, and the Bombay University Library for the facilities they were pleased to give to collect the relevant material.

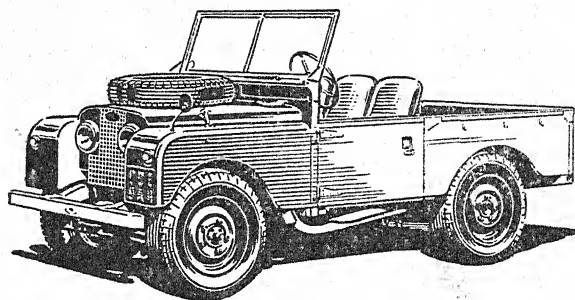
Shri Arthur I. Desouza of Ismaili Printing Press for extra-ordinary co-operation in printing and production.

And to the patriotic business organisations who have encouraged us by taking up advertising space in this publication.

We confess that without the above said moral and material encouragement it would not have been possible for us to realise our long standing and most cherished dream of presenting this publication to the nation in general and the youth in particular on whose shoulders, in main, rests the responsibility of holding and enhancing the world wide reputation earned by the officers and men of the our defence forces as "active and effective guardians of national freedom, national ways of life, world peace and orderly progress of mankind".

PUBLISHERS.

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LAND- -ROVER

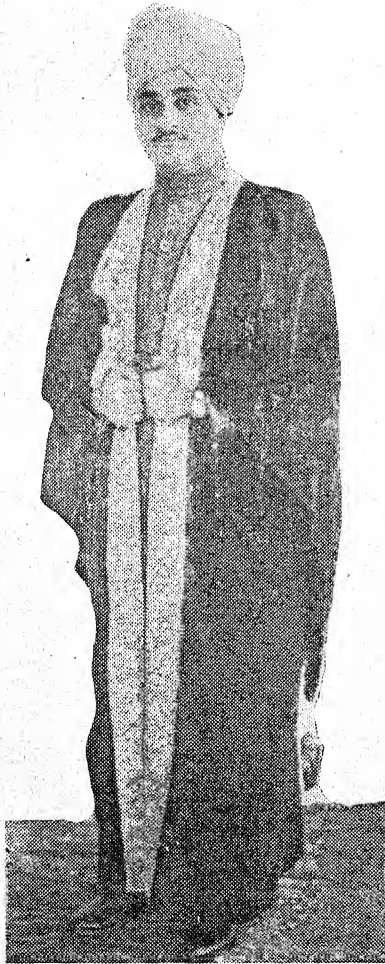
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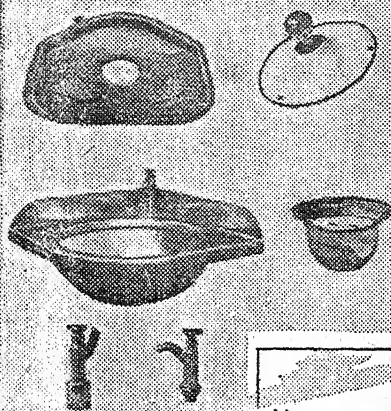


I am glad to know that 'Indian Youth' is again bringing out an Armed Forces Edition.

The country is indeed proud of its Armed Forces who have shown outstanding courage and devotion to duty in all the tasks that have fallen to their lot. In the defence of the country, in successfully carrying out difficult and delicate assignments abroad and in shouldering internal problems caused by unforeseen calamities they have shown exemplary devotion and high sense of patriotism. We are all proud of them and their magnificent traditions.

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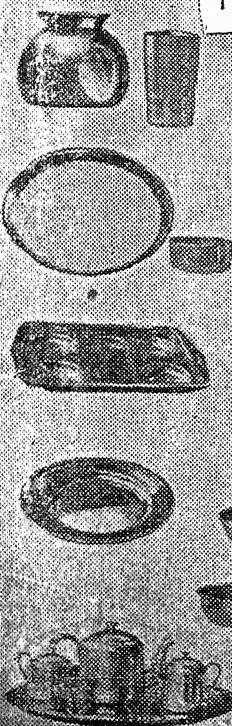


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MINISTER FOR DEFENCE,
NEW DELHI.



In every country the older generation does its duty and then passes on the mantle to the next, the younger generation. The future of the country,

therefore, is always the responsibility of its youth. This is particularly so in India where we are building up a great edifice and the important task of consolidating our progress will fall on young men of today.

I am glad to say that signs are not wanting that our youth will rise to the occasion. Nowhere is there greater evidence of this than in the Armed Forces of India where a fine body of young men are doing their duty with efficiency, zeal and sense of patriotism. Outside the forces too there is a growing consciousness of the role of youth in the advancement of the country.

In encouraging and fostering a spirit of service, specially in the defence of the country 'The Indian Youth' can play a worthy part and its enterprise in bringing out an Armed Forces Edition will, it is hoped, help in that direction.

I wish the 'Indian Youth' all success.

DR. KAILASH NATH KATJU,
Minister for Defence.

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C-94

ARMY HEAD QUARTERS
NEW DELHI.



The defence of the country is ultimately the responsibility of the youth. The army and other armed services play their part and that part is important

and essential. But in present day wars it does not cover the whole defence of the country. Wars today are all embracing, affecting the civilian as much as the soldier and therefore, the youth of a nation have to be prepared for their defence and the defence of their countrymen. Also for manning the Armed Forces it is the youth that has to provide suitable material.

I am glad in India our young men are becoming more and more defence conscious as is evident from their response in respect of enrolment to various organisations that have been set up for giving military training. In fostering this spirit the 'Indian Youth' can help greatly. The production of Armed Forces Editions of the Journal is certainly a step in that direction.

I wish the 'Indian Youth' all success.

GENERAL MAHARAJ RAJENDERSINHJI.

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**7
 ANNAS**



NAVAL HEADQUARTERS
NEW DELHI.



It gives me great pleasure to send a message of greeting to 'The Indian Youth' in this year's Armed Forces Edition.

It is a matter of great satisfaction that this edition is to have an international circulation thus ensuring the dual purpose of bringing the services to the nation and nation to the world.

The nature of our task takes us, in the Navy, to many foreign countries where we make innumerable friendships. Some of our friends abroad are sure to read this and to them also Navy sends special greetings.

ADMIRAL SIR MARK PIZEY.

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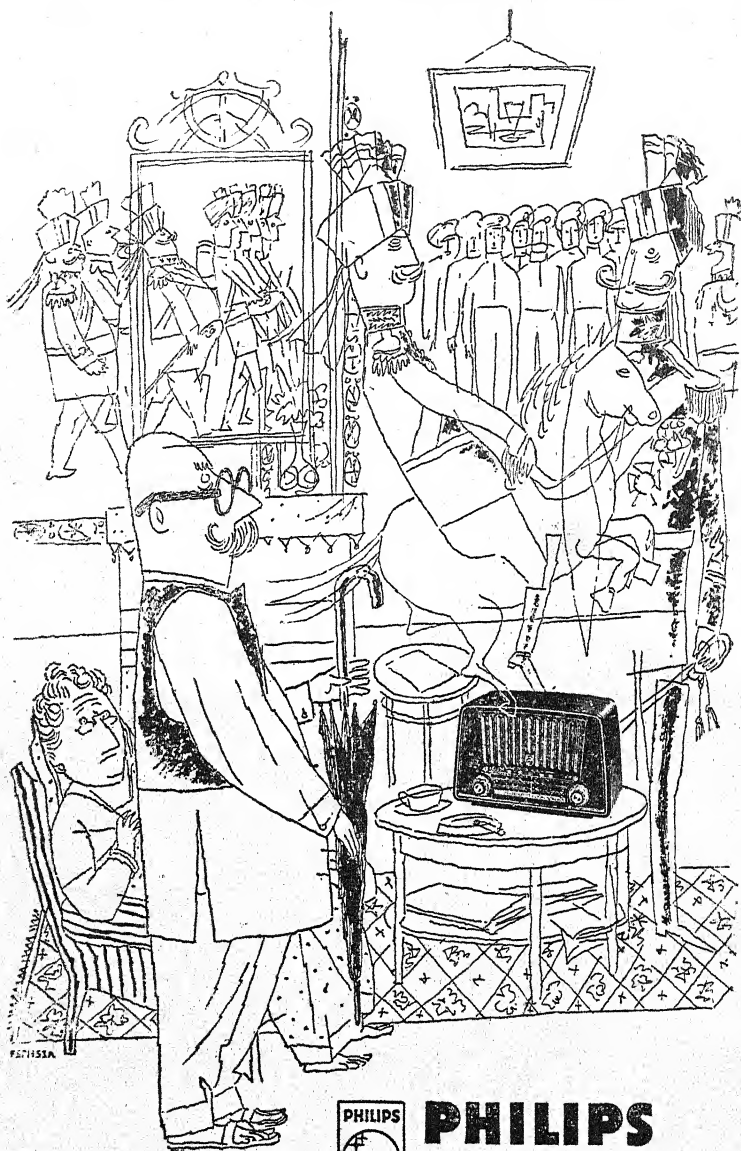
**AIR HEADQUARTERS
NEW DELHI.**



I am interested to note the 'Indian Youth' is publishing an edition on Armed Forces as an annual number.

The youth of the country are indeed the true guardians of the nation. To be useful citizens today every youth has a responsibility towards sharing in the defence of his homeland. It is, therefore, very fitting that the journal should seek to keep the youth fully informed about the Armed Forces. This is undoubtedly the right encouragement for our young men with high ideals and spirit of adventure to serve in increasing numbers in the defence of their country.

AIR MARSHAL S. MUKERJI,
Chief of Air Staff.



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**BOMBAY HOUSE,
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The traditional high qualities of Indian Armed Forces has justifiably won international acclaim in responsible quarters and have for many years been

recognised as one of the best fighting material in the world. The tradition has been well maintained under our National Government and the only way in which the Armed Forces of India can continue to enjoy this reputation is to recruit the right type of Indian Youth in their ranks.

In this difficult task, a publication like the Armed Forces can contribute materially by devoting its energy to the service of youth. The vital need of building up youth serving organisation can receive material assistance by offering an inspiration to the youth of the country in the shape of a journal of this kind.

I congratulate the editor of the Indian Youth for bringing out this Armed Forces Edition in an endeavour to serve this vital cause. I wish him every success in his laudable mission to serve the youth of India.

NAVAL H. TATA.

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**CONGRESS HOUSE,
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I have watched with keen interest the efforts made by THE INDIAN YOUTH during the past four years to promote defence consciousness amongst

the youth and to make the very best and most suitable of them available to the services.

The fine body of young men who constitute our national defence forces today have distinguished themselves by their outstanding contribution to consolidation of national freedom and preservation of international peace.

The fundamentals of our home and foreign policies have been peace at home and peace all over the world. We have been working for it and we shall continue to work for it. With this aim in our view, we have to keep our national defence forces in full trim and in perfect readiness to meet all emergencies.

I congratulate the editors of THE INDIAN YOUTH for having planned to publish this edition which will be yet another fitting contribution to the patriotism of the Indian Youth. I wish this effort all success.

S. K. PATIL,
President, Bombay Pradesh Congress Committee.

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It gives me great pleasure to learn that **THE INDIAN YOUTH** are bringing out an Indian Armed Forces Year Book, 1955, which will not only

have national but international circulation. The publication is to contain important sections referring to the historical development of the Armed Forces, the re-organisation and policy relating to the same etc. The Year Book, particularly seeks to emphasise the role of our Army in the fight for freedom and the dynamic role our Defence Forces are to play by participating in nation building activities. The publication will also contain technical information relating to our Army, Navy, Air Forces and I have no doubt that the same will prove to be immensely useful.

I wish **THE INDIAN YOUTH** every success in its great mission to serve the country.

BABUBHAI M. CHINAI,
President, Indian Merchants' Chamber.

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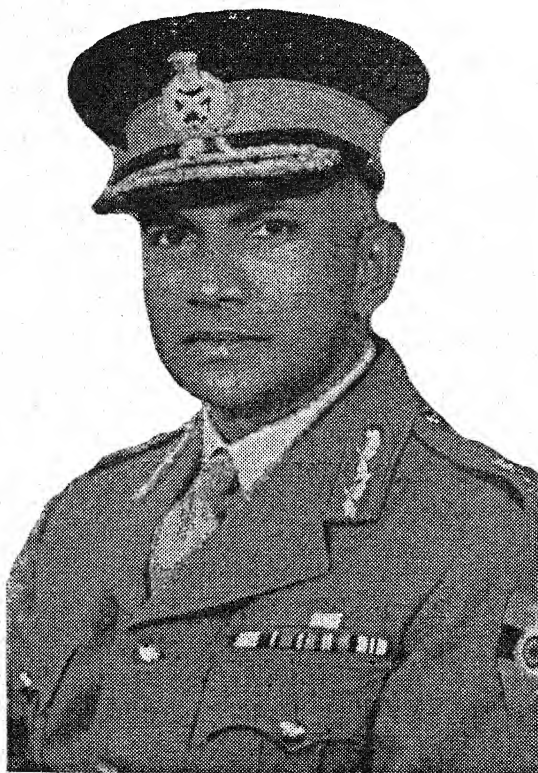
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THE
INDIAN YOUTH

Maneckji Wadia Building,
Mahatma Gandhi Road, Bombay - 1.

Editor Publisher
JASWANT SINGH

General Manager
K. S. VAIDEESWARAN

Sales & Advertising Controller
G. S. S. MANI

INDIAN ARMED FORCES YEAR BOOK-1955

**FIRST CONSOLIDATED REFERENCE BOOK
ON THE INDIAN ARMED FORCES**

Compiled & Edited

by

JASWANT SINGH

PUBLISHERS: "THE INDIAN YOUTH"

**Maneckji Wadia Building,
Mahatma Gandhi Road, Bombay-1.**

355
355
Edited by JASWANT SINGH and Published by him as a
special edition of the 'Indian Youth' at Maneckji Wadia
Building, Mahatma Gandhi Road, Bombay-1.

Price Rs. 5/-

Printed by V. N. Hooda at the
ISMAILI PRINTING PRESS,
Dongri Street, Bombay-9.



DREAM REALISED

INDIAN ARMED FORCES have a history and traditions truly ennobling and inspiring to the youth of any free and freedom loving people. From times immemorial the soldier sons of India have set up standards of devotion and attachment to freedom, peace and orderly progress of mankind and service and sacrifice in that respect which others have found hard to touch in spite of all the circumstantial advantages being in their favour.

Indian Armed Forces, as we know them today, are the growth and development of a very humble and, it must be said, not a pleasant and palatable beginning at the hands of East India Company, some two hundred years ago. It must be said to the credit of this body of armed men that in spite of the serious handicaps of service under a foreign flag and fight for a cause NOT their own their performance in all theatres of operations during the last two wars earned praise and admiration of all.

Indian Armed Forces, however, came to their own when India won her freedom and when the rightful duty of defending and preserving the freedom fell on the shoulders of the soldier sons. During the horrible days in the wake of partition in the first instance and in Kashmir, Hyderabad and Junagadh later they proved their absolute competence and demonstrated to the world that the prize of national freedom won after a long and bitter struggle could be lost to none.

Military history of the world is full of instances when armies left their national shores on a mission of aggression and conquest. There has, however, been only one instance when the army of a people left its national shores to defend

and preserve the freedom of another people. The performance of the units of the Indian armed forces in that remote and war torn Korea will remain a shining page of history till such time as men and nations shall have freedom, peace and orderly progress of mankind uppermost in their hearts.

Proud and worthy contributions by the Indian Armed Forces to the cause of freedom and peace, both national and international, as it has been, it must be admitted that on account of the peculiar conditions of service and on account of the exceptional atmosphere in the country they were not held in as much esteem as they rightly and justly merited. To carry the soldier son to the people, to endear him to them all and to ensure a constant flow of the fittest and most patriotic of nation's youth into the armed forces fold was one of the major problems which faced the government and the leaders of patriotic thought and opinion immediately after the dawn of freedom. The government and the leaders left nothing undone to achieve the object. But an energetic action on youth level was needed much more than on government and other levels.

We admit that it was in recognition of the supreme importance of the task and in discharge of our humble duty as a youth serving organisation that we launched the publication of ARMED FORCES EDITION as an annual feature of the INDIAN YOUTH. It was on an extremely modest scale and its scope and sphere of service was very limited. But we had in our mind to develop it into a full scale annual review of developments inside and in respect to the national defence forces and to present to the youth opportunities of patriotic service that they had therein.

We admit that under the circumstances that we were placed and the resources that we had at our disposal the task was not an easy one. In spite of the fact that the Armed Forces Editions hitherto published had registered progressive success we had our reluctance to take the next step. We admit that but for the pressure brought upon us by scores of youth and student organisations in the country we would have allowed this step to wait for another couple of years or so.

The completion and presentation of this volume, the first of its kind in the entire range of publications in the

country, is a major event in our existence of eight years. It is in fact the realisation of a dream. We naturally have a sense of pride and satisfaction. But we shall consider the task really done and duty performed only if the volume is received by the public in general and the youth in particular in the sense and spirit with which it has been proved only if it serves the purpose for which it has been produced. It is only then that we shall forget the hardships suffered in its production and feel encouraged to suffer to increase and expand its scope and sphere of service year after year.

JAI HIND.

Jaswant Singh.

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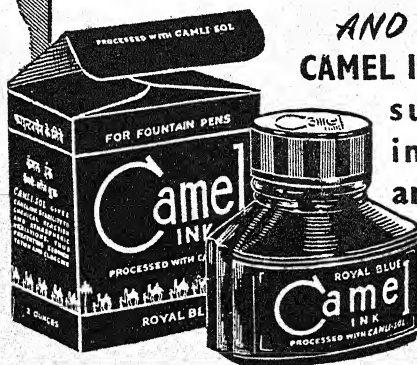
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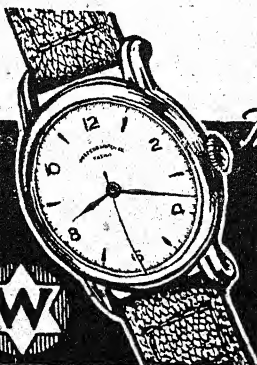
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PART I.

SECTION A

GENERAL

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THE "TOTAL WAR"

BEHIND all actions in peace and war is national policy. War is resorted to and is imposed by a country or a group of allies on another when all peaceful approaches and diplomatic methods fail. Warfare is conducted with the object of defeating the opponent by annihilating his armed might, neutralising his war potential and taking over his economic and administrative machinery as necessary adjuncts to power. The simplest thing ever said about war, whether it is pictured as a bout of fisticuffs or clash between armoured forces is to be found in Balzac's 'Droll Stories'. Therein it is related of a certain captain Cochegrue that 'In great battles he endeavoured always to give blows without receiving them, which is and always will be the sole problem to solve in war'. This is true for whether at sea, on land or in the air, to demoralize, disorganise and destroy without being demoralised, disorganised and destroyed are the means whereby a fighting force imposes its will on its enemy.

Gone are the days when wars were limited to 'bloody combats' between two opposing forces and death and destruction was strictly confined to fighting lines only. Wars now have been 'mongolised'. With the development of military aircraft the warfare has extended into third dimension and with it has suffered fundamental changes in its character i.e., objectives, methods and procedures. Today not only whole nations tread the war path but all objectives have become legitimate, churches, hospitals and schools as much as fortresses, factories and railways, as much as dockyards, barracks and airfields, as much as armies, navies and air fleets. In striking contrast to the 'democratic war, which it was in the days gone by' war today is on an autocratic footing, the will to win concentrated to its utmost, the means to win developed to their utmost and the power

to endure stretched to its utmost. It is a war of attrition, of mass destruction at its worst, testing every bit of physical and mental endurance of individuals and solidarity of a nation's unity of purpose and efficiency of administration and organisation. In such wars as these there is but one supreme object. This is not as heretofore, the defeat of the enemy's fighting forces and negotiated peace but instead the enemy's political, social and economic annihilation. This means as Monsier J. S. Bloch has pointed out in his book 'War of the future in its Technical, Economic and Political Relations' that in an industrial civilisation wars of the first magnitude can end only in stalemate or revolution.

PRINCIPLES OF WAR

For many thousands of years mankind has applied a large proportion of its inherent resourcefulness and energy to the practice of warfare. From the prehistoric days of internecine squabbles to the present era of 'Total Wars' on international planes, large communities of human beings have tried to impose their will upon, or right their wrongs against, their rivals. It is only natural, therefore, that great commanders of history and in fact all students of warfare, should have attempted to draw certain lessons from past campaigns in order that the future wars might be conducted the more profitably. For want of better name they have been called 'Principles of War'. These 'Principles' are not meant to be rigid laws or regulations, but only a guidance and basis for military study. Principles of War have been handed down to us not for blind adherence but rather to serve as a warning that in disregarding any one of them we accept risk of which the enemy might well take advantage.

OBJECTIVE :—The ultimate political aim of a nation at war is to impose its will upon the enemy. All other objects are subsidiary to this main object. To annihilate the armed forces of the enemy, to capture his capital city or to destroy his industrial nerve centre(s) are military objectives subservient to the political. At lower levels, of army corps and divisions, the object of the lower formations depends upon that of the higher. If this object is not maintained in its entirety then the force has failed in its duties as a part of a team, even though in a more parochial sphere it may have gained a victory. The thing to be borne in this respect is that the object once fixed must be adhered to until achieved, every operation must be tested by its bearing upon that

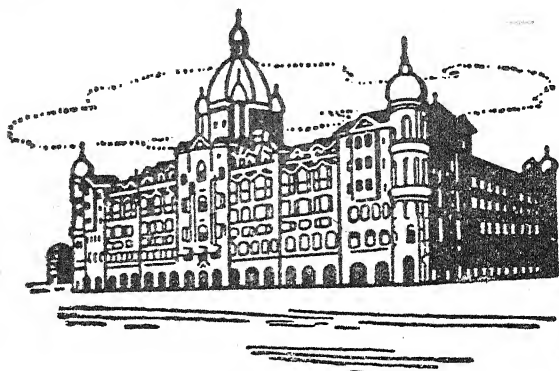
object, there should be only one object at a time, and that only by the fulfilment of one's own objective can the higher commander's aim be achieved.

MORALE :— Quality rather than quantity, courage and bold determination rather than skill, armament or resources are essential for ultimate success. The complexity of modern warfare, coupled with the increasing employment of scientifically developed weapons and the immense possibilities of surprise tactics can rapidly undermine the morale of even highly trained and iron disciplined units. It is good leadership, discipline, comradeship, contentment and will to win which form the basis of high morale.

OFFENSIVE ACTION :— Military history provides no example of victory won purely through defensive action. Defence can, at best, avert defeat; it cannot win final victory. This is as true of the 'Dynamic Defence' of today as it was of the passive defence of former days. The modern conception of defence being as 'attack halted' is excellent for the purpose of uplifting morale but it does not in any way replace the offensive as a war winning factor. On the other hand, the principle of 'Offensive Action' should not be interpreted to mean that the attack is the only sound operation. It does not teach that an army should always be on the offensive. It merely stresses the truth that at some stage of the war offensive action will have to be resorted to in order to win final victory. Even the most peaceful nation's defence is only a prelude to offensive operation. The art of the commander is to choose the most appropriate moment to pass to offensive. The main principle behind offensive action is that the offensive must strive to overcome the strength of the defence by manoeuvre and morale, and that since final victory can only be secured by offensive action such action must be the prime purpose of all strategy.

CONCENTRATION OF ACTION & ECONOMY OF FORCE :— The principles of concentration and economy of force are co-related.

The principles of 'concentration' implies that once a decisive course has been agreed upon all available forces must be concentrated to achieve that purpose. Napoleon,



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as the foremost exponent of this principle said 'The art of war may be reduced to a single purpose: to unite on a single front a greater mass than the enemy'. Although it is an exaggeration to say that concentration is the one ultimate principle of war it is helpful to bear in mind nevertheless that of all the principles it is the one that helps to gain the most determinate advantage over the enemy.

The principle of economy of force is complimentary to concentration because the very fact of concentrating troops for one purpose means that other front or areas are denuded. The principle helps to achieve concentration by ensuring that the strictest economy is enforced in detaching troops for the commitments which do not directly help the attainment of the main purpose. Such detachments must be kept to the barest minimum and must be able to contain the maximum number of enemy force wherever possible. This can be effected in three ways (1) to reduce to the minimum one's own detachments, (2) to employ such detachments to contain maximum numbers of the enemy (3) to disperse the enemy's efforts at concentration by using these detachments at widely dispersed points.

The principle of economy of force is sometimes misunderstood as the holding back of large bodies of troops, and committing the minimum forces to battle. This is not the intended implication. To hold back troops when there is little prospect of using them, is false economy, if such holding back interferes with the speedy attainment of the objective. The use of reserves on the other hand is tactical application of this same principle. When information is lacking or the situation is such that only after the initial engagement can the enemy's weak spot be discovered, such reserves are the only means of attaining concentration. In such cases reserves are not held back from the battle, but are intended for battle, being held in the hands of the commander only after the decisive time and place have been reached.

CO-OPERATION :— Field Service Regulations say of this principle: It is only by effective co-operation that the component parts of any force or nation can develop the full measure of their strength. In order that their co-operation may be effective each must know the capabilities and



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limitation of others, and apply their knowledge in giving and demanding assistance. Co-operation must be achieved from the highest level of politico-strategical planning to the smallest units and sub-units of the armed forces.

In the military sphere, co-operation is ensured to a large extent by the system of command and the issue of orders. The degree of co-operation which can be achieved by the exercise of command varies considerably with the type of warfare. In the static stages of trench warfare during the First World War, orders issued by the High Command were able to lay down precise objective, exact times for infantry and artillery action, boundaries and so on. Events could be forecast with a reasonable amount of certainty because operations were not usually carried out with any but the most limited objectives. Co-operation between the subordinate commanders could, therefore, be enforced during the greater part of ensuing operations. In the mobile warfare of today however, it is not possible to issue very detailed orders for any campaign or battle. The High Command has to content itself with issuing directions containing general instructions for timing and movement. Much is left at the hands of the subordinate commanders. The degree of co-operation is, therefore, decided by mutual adjustment of details by subordinate commanders among themselves. The importance of the principle of co-operation is further emphasised by the increased importance of combined operations, where the navy, the army, and the airforce work together as one team. Such operations range from the local tactical aspects of tank-dive-bomber combination to large scale operation such as invasions or strategic bombing. In such operations it is not possible for the supreme commander to regulate the smooth running of operations by the issue of an order. Such factors as differences in technical phraseology, inter-arm rivalry or distrust and the lack of most elementary knowledge of the tactics of each other's arms demand that the closest personal contact be maintained between individual officers of the various arms in order to attain maximum co-operation.

SECURITY :—The first requisite of a successful offensive is a secure base. This includes adequate defence of airfields and ports, communications, radar systems and any other installations vital to the armed forces. Moreover, unless

adequate provision is made for the security of the country's commerce, sea communications and war economy one might be defeated before one had time to develop offensive. And fighting men lose confidence in equipment that does not offer reasonable security against surprise tactics by the enemy.

It should be clearly understood from the start of the planning stage that the principle of security assumes importance; it prepares the way for the executing stage. In the realm of tactics it is wrong to associate security with timidity. The principle of security must not be allowed to justify undue caution and avoidance of risks. The real implications of the principle are 'caution in planning, boldness in execution'.

The term Security is also used to define secrecy necessary in planning, in preparing for operations and in the designing and producing of war equipment. Its use in this sense has nothing to do with the principles of war except that it is a factor in the principle of security.

SURPRISE :— The principle of surprise may be defined as the creation of a situation, at a calculated time and place for which enemy is unprepared and which so upsets his plans as to engineer an unconsidered reaction on his part. The unexpected use of almost any factor can produce surprise. It can be achieved at all levels. But it can be effective only if it does not allow the enemy to actuate countermeasures.

Surprise may be of various types, ranging from a strategical or tactical one to one based on simple artifice or a stratagem. There are surprises of time and place, of organisation, material, design and new weapons. The chief elements of surprise are secrecy, deception, concealment, originality, rapidity and audacity.

Surprise is equally effective in strategy and tactics. Strategical methods of obtaining surprise range from the negotiation of secret political treaties or industrial and commercial enterprises, to the use of new weapons or the employment of new tactical doctrines.

Surprise is a particularly potent factor in air operations.

It must always be remembered that the value of surprise depends on the ability to deceive the enemy so completely

that his mental balance is upset at the most critical moment. Methods of obtaining surprise are in themselves simple enough to plan. Even the most indifferent commander can devise means which are potential plans for surprise. But it is not sufficient to merely produce a plan. It is in execution that value of surprise is tested.

In modern wars, where the channels of information are numerous and swift and where fifth column plays an important role, any information which is made common knowledge in an army, very soon reaches the enemy. It is therefore obvious that secrecy is essential if surprise is to be obtained.

If surprise is of such importance in war it follows that protection against enemy surprise should be a prime consideration in planning. A commander should always think ahead and attempt to force what unexpected action the enemy might take. It is not enough to consider the 'courses open to the enemy' during appreciation. The commander must constantly be prepared for the 'most improbable' by the enemy. Von Moltke has said 'I notice that always there are three courses open to the enemy and that he usually takes the fourth. It is one of the essential requirements of generalship that he be ever ready for this fourth course.'

MOBILITY :—Although mobility is one of the commonest principles of war, its full implications are often overlooked by the casual students of warfare. There is much more in mobility than mere competitive movement.

It must be realised from the start that mobility is a comparative principle, correctly expressed only when in comparison with the enemy's mobility. Mobility may be defined as 'the power to move or to act more rapidly than the enemy.'

The simplest aspect of mobility is competitive movement, a race for an object. The next factor to be considered is flexibility in planning. If a commander's plan of operations is so rigid that he is unable to change it readily when faced by unforeseen circumstances then it lacks potential mobility. He loses time while drawing up fresh plans, time which the enemy can utilise in pressing home an advantage.

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Manoeuvrability is also an important fact in the attainment of mobility and is dependent mainly upon good training and sound tactical formations. Lastly the attainment of mobility depends on good staff work and efficient battle procedure. Both these factors serve to reduce the time lag between the planning and execution stages. Good staff work not only helps in battle procedure but also reduces the time lag by ensuring smooth administration. Staff work sorts out all the complex situations of a modern army on the field which would otherwise be inextricably entangled in a mass of administrative and support problems, destroying the mobility of the army.

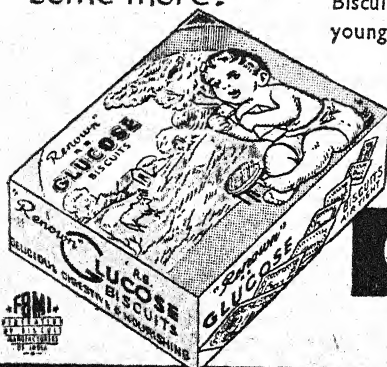
In the case of an air force, sound strategic bases, adequate communications and flexibility in administrations are all important. Within its tactical radius of action the aeroplane is highly flexible weapon in that it can be switched at a moment's notice from one point to another. Beyond that tactical radius however aircraft are extremely immobile unless they can be moved over reasonably organised air routes to adequately equipped bases at the other end. Mobility in this case is therefore largely a question of organisation. As aircraft becomes more complex i. e., heavier and faster, facilities not only include bases with appropriate runways and accommodation available in place but also fuel and ammunition stocks, spare parts, navigational aids and the necessary communication net-work.

ADMINISTRATION :— Sound administration is the governing factor in any organisation for efficient harmonisation of operational and administrative plans. In-adequate or poor administration gives rise to lack of harmony and balance which in turn develops into wastage of effort. Every administrative organisation must be simple to be efficient. It is important that administrative arrangements must be capable of meeting the strain imposed on them by the operational plan which has to be weighed against administrative capacity. The increased tempo of war and the use and complexity of modern weapons emphasise and enhances the importance of administration.



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WAR POTENTIAL OF A PEOPLE

Modern war is total involving all the civil and military elements and resources of a nation at war. The successful conduct of the operations of a modern war lies in the best combination of the various strategic plans and in effective mobilisation. The more efficient the co-ordination of the various national strategic plans and actions at various stages the more economical and successful will be the resultant effort for war. Such a direction of overall military and civil power and resources for speedy success in a variety of operations fall therein the purport of a modern 'TOTAL WAR'.

Speedy mobilisation is the key to preparedness for war. It is not merely the enlistment, training and expansion of the military resources but entails equally the maximum utilisation of all industrial effort, in fact of the entire war potential. The term **War Potential** embraces in the main, the following :—

NATIONAL MORALE

The rate of build up and speed of mobilisation determine a nation's ability to enter into a major war. A nation may possess considerable strength in armed forces and material and industrial resources but if its political integrity and morale are neglected or weakened for one reason or another, the diseased limb will eventually create disruption in the administration and the consolidation of war effort. No nation can hope to win and reap the fruit of battle honours unless there is in the government administration a unified control and direction for war effort and in the people to suffer, sacrifice and fight the enemy to the end.

ECONOMIC RESOURCES

Economic resources of a nation include man power, machine power and materials utilised in a variety of combination towards the overall national

effort. The strategy of war introduced this economic factor as an important instrument opening up new risks of attack and creating new problems of defence. This fact is of vital importance in a modern war where the trend of the fast moving operations linking up one strategy with another is dependent upon a planned turn over of the economic machine for the purposes of war. In a modern war it is the primary object of a country to hit at the economic objectives and to frustrate the enemy's ability to maintain his forces with a view to weakening his power of resistance and sustained war effort. The internal and external economic resources play a predominant part in determining a nation's ability to sustain the pressure of economic warfare and they are therefore the prime factors in the fighting potential of any nation.

Economic warfare is directed against the economic resources of the enemy with a view to frustrate the object of his economic effort i. e., his ability to put into the field and maintain largest possible forces well equipped. Such a warfare is imposed by blockade, financial pressure, war trade agreement and direct military action against the economic resources. The counter strategy aims at frustrating the objects of a belligerent's economic warfare. Economic strategy lies in advance planning for dispersal and the most efficient deployment of key industries, reserves and various resources and for adequate transport and communication system. In peace time this strategy lies in overall planning for a speedy switch-over from peace to war.

With the progress of warfare towards wars of wits and scientific weapons the economic warfare enters even a more important phase. The nation with the best and the strongest combination of all its resources, including intelligence and research organisations, stands in future conflict the best chance of bringing its opponents to its knees. Time would be a paramount factor in any future war as timely application of economic pressure must affect the war potential of the belligerents.

AVAILABILITY OF USEABLE MAN POWER

As a result of the last two wars armed forces have gone to embrace large number of able bodied men and women than before. We seem to be very near the idea of citizens armed in

all countries but still all have not become soldiers nor all will become soldiers. Speedy mobilisation of available and useable man power has been and remains a vital factor of war potential. For varied demands, able hands are required to work for the national effort ranging from specialised technique to unskilled labour. A nation not devoted to planned training and utilisation of man-power can hardly hope to enter a major war and still less to win it.

SCIENTIFIC DEVELOPMENT & RESEARCH

Science has, for centuries, exerted a great influence on warfare. Particular stress on it was evident during the last war when large number of scientific persons were mobilised to aid war effort, particularly in the field of radar, bombing, armament and intelligence. Much operational research was carried out in the application of scientific methods to the operations of war and in the improvement and employment of weapons and the formulation of up-to-date tactics and strategy. Scientific study has now been recognised as an essential branch of strategic study and greater and greater importance will continue to be attached to it by all those who want to remain at peace by having strength enough to make war 'not an easy victory for the enemy'.

THE ARMED FORCES — EFFICIENCY & MORALE

To wage and win war is ultimately the responsibility of armed forces. A vital and accurate measure of the efficiency for war of the armed forces of a country is their morale the morale of the armed forces personnel and of the industry that maintains and supplies the requirements of war. Great soldiers have agreed with Napoleon that in matters military the moral is to the material as three is to one. We hear much of morale in war generally meaning whether the troops are in good heart or not, whether they are depressed, in fact whether their chances in next battle in which they may be involved are good. But the moral needs of armed forces go far deeper than this. They depend upon the detailed circumstances in which each individual finds himself and his dependants (if he has any) at any given moment. Pay, food, clothes, housing, rules of peace time life, leave health and many other factors. The amount of consideration that each factor can receive must of course

vary between peace and war and the length of time for which men are required to remain under unfamiliar or unpleasant conditions. But they all count and at all times and often the most apparently trivial of them may become the most important in the eyes of men most affected.

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FIGHTING POWER

HISTORY & DEVELOPMENT

The objectives of wars have been to demoralise, disorganise and destroy without being demoralised, disorganised and destroyed and thereby impose their will on the enemy. Just as in objectives so also in fighting elements have been guarding, hitting and moving. To this has been added command, skill and discipline.

TWO WEAPONS

With few exceptions, two types of weapons have dominated every battlefield — missile and shock : such as arrow, javelin, and bullet on the one hand and club, sword and spear on the other. For the development of the missile the line has been the most suitable formation and for shock action the columns. In one case because missile throwers must have a clear field of fire and in the other because it is only from the grouping of fighters in depths that a series of powerful blows can be struck in rapid succession. Secret in shock action consists in velocity of weight directed against the narrow attack front where as in missile fight the secret is to be discovered in volume of fire delivered from a wide front. It is preferred that this front is of such width as overlaps the enemy's line and in consequence enables concentric fire to be brought against it. Wherever warfare has developed as an art missile power has formed the base of shock action. The ultimate aim of shock action is to open a road to the enemy's rear which is its weakest point and therefore the decisive point from where victory can most readily and completely be gained. This is done in one case by passing through the front of the enemy line and in the other by circumventing it. Two classic examples of penetration and envelopment are the battles of Arbela and Cannae, the first won by Alexander the Great over the Persian horde under Darius in 331 B.C., and the second by Hannibal over the Romans under Varro in 216 B.C.

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The battle of Kadesh is, however, the only record of ancient Egyptian warfare. There are no surviving archives on which a systematic military study of ancient Egypt can be based.

GREEK PHALANX

The earliest organised tactical formations recorded by the Greeks are of opposing armies facing each other in parallel order, in single lines of ordered masses varying in depth. The Greek Phalanx remained irresistible for centuries. The Romans possessed no weapons which could improve upon the shock tactics of the Greeks. The efficiency, discipline and training of the Phalanx soldiery maintained their high standards to the last. The main drawback of this, however, was complete absence of reserve as we understand it and lack of mobility. Romans realised it and their legions were organised in three lines, the main body, the support line and the line of reserves. The Roman legions were organised on the principle of age. There were four main age groups...the Velites or the light infantry were the youngest soldiers, the Hastati were the next youngest; the principes were men in the prime of life and Tirones were the old soldiers. The glory of the Romans was at its zenith in the days when their legions stayed Hannibal's bid for the conquest of Italy. This period was followed by one of inexplicable stagnation in military science. Tactical doctrines were completely neglected and from that period until the final overthrow of Rome's armies by the Gothic invaders, there was steady decline in the prestige of the Roman Army.

DAWN OF CAVALRY

The battle of Hardrianople 378 A. D., marked the beginning of cavalry era which forms the next stage in the history of warfare. During this period the civilised world witnessed almost constant war, spreading over vast area, but there is little evidence of any advancement in the art of war. The scientific conduct of war died with Caesar and was not revived until the middle of the fourteenth century. The only feature of cavalry warfare worth appreciation was the use of mobility. Perhaps the best example of the use made of the mobility of the cavalry arm to enhance its tactics is seen in the generalship of Jengiz Khan and his lieutenant, Sabutai. They so improved their mobile tactics that in the attack, they dispensed with the need for a pivot upon which to base their manoeuvre. Their cavalry arm was used both to contain the enemy and to deliver the decisive blow.

The Cavalry remained the main arm so long as infantry were held in background and the evolution of supporting arms was still in its embryo stage. After the battle of Crecy, a revolution in tactics was effected by the English longbowman and further by the growing use of firearms. The armour of the cavalry began to get heavier and with the advent of firearms the dragooning process instituted in the cavalry deprived it of its main characteristic — mobility. It was, however, not until the seventeenth century that cavalry was finally deposed from its position as the main arm.

FIREARMS

The first attempts to extricate the art of scientific warfare from this chaotic state were made during the seventeenth century. The credit for the first venture goes to Gustavus Adolphus, King of Sweden, often described as the 'Lion of the North'. His first step was to reorganise each arm completely and then to combine their tactics on all arms basis by establishing them on fire power. The main principles on which he based his reforms were the bearing of good discipline and organisation on mobility and battle worthiness, the musket as the master weapon of warfare, fire power as the basis of all arms co-operation and the importance of a sound administrative system. Striking and original as his reforms were it was in development of artillery that his successes were largely founded. Just as the Turks were the

first to gauge the value of the Seige Gun, Gustavus was the first to gauge that of the field gun. He was the first to introduce the really light and mobile field piece, three, four and six pounder. It was about this period that the introduction of bayonet added to the advancement of infantry. The great drawback of the musketeers was that they had to be protected by pikemen, owing to the lack of any means of absorbing the shock of cavalry onslaught at close quarters. The evolution of bayonet, however, permitted the musketeers to dispense with the protection of the Pikemen. It gave them just that power of shock resistance which enabled them to escape the dilemma of having to adopt dense formations to resist cavalry, a fatal procedure in those days of increasing employment of artillery.

Turenne was the next great commander who maintained the impetus of infantry tactics. He gradually perfected the art of manœuvre by steadily replacing the old system of parallel orders of battle with less rigid formations. He instituted the practice of manœuvre on the march i. e., tactical moves before contact had been gained with the enemy. His was in fact the earliest inception of what was later to be called 'Grand Tactics'.

TOPOGRAPHY

With the sudden increase in the strength of armies, came the necessity of covering very much larger areas by the battle front of armies deployed for action. No longer did it remain possible for generals to choose open space in which to engage for battle. Hills, streams, hedges and built up areas had to be taken in their stride. This gave rise to the importance of such minor operations as reconnaissance, scouting and manœuvre for operations, protection on the line of march and the rest and so on. The value of topographical objectives began to show its importance and gave rise to the art of disposing troops to fit the ground. The seizure of topographical objectives, rather than the ability to break the enemy's weak points became the criterion of tactical skill. These new conceptions in tactics resulted in great strides in tactical development. Marlborough, one of the greatest tacticians of history, continued the cultivation of these ideas and improved on them. He added to his tactics the element of surprise and demonstrated

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convincingly at Blenheim and Ramilles that the true key to position was the topographical one. The tactical doctrines of Marlborough provided the keynote to the Napoleonic tactics and in fact to the modern tactics generally.

HORSE ARTILLERY

Fredrick The Great of Prussia's claim to military fame is not based on his strategy or tactics but his system of tactical training and the improvement of the artillery arm. He was responsible for the introduction of mounted gunner as postillions, the first step towards the creation of horse artillery. He was also great believer in the howitzer. His tactical training which incorporated organised peace manoeuvres for the first time in history, and his improvement of the standard of musketry in his armies were the main causes of his success.

NAPOLEONIC ERA

To the students of Napoleonic era art of warfare, be it strategy, tactics or the art of generalship, there is no other period which yields such a rich harvest of lessons as the Napoleonic era. Napoleon's greatness as a military commander lies not only in his successful campaigns but in his perfection of generalship and the art of grand tactics. History provides many examples of commanders who led their armies from victory to victory, but there is not one from whom can be imbibed the same wealth of military knowledge as from the First Consul of the French Republic.

Napoleon was the first to introduce autonomous divisions, a force of all arms organised so as to be independent. This innovation was necessary to and in keeping up with the increased mobility of infantry disposed in column formations. It facilitated command and admitted of independent action by local commanders during manoeuvre stages of battle. The further development of the idea led to the organisation of divisions into corps, an organisation in general use today. It was the background of columns tactics and self contained divisions which led to Napoleon's theory of employing armies in various separate masses instead of one cohesive mass. The great discovery of Napoleon was that the movements of various masses employed during the strategical stage could gradually be merged into tactical stage and that the enemy could be attacked on the field of battle from more than one direction.

Napoleon realised the need for an efficient system of inter communication for the achievement of co-operation and therefore organised cavalry into formations which could perform the task, not only of inter-communication but also of protection and deception. The complication brought about by the control and direction of so many different bodies of troops necessitated the improvement of logistics. Calculations of time and space and the problems of supply and transport were increased out of all proportions. Whole art of Napoleonic 'Grand Tactics' would have been a failure without corresponding reforms in the domain of logistics. Hitherto, the art of generalship had been based mostly on leadership. Napoleon raised the art from mere generalship to directorship, the present day conception of a general's requirement.

As far as tactical advancement was concerned the chief cause of Napoleon's successes was handling of artillery. Without introducing any revolutionary ideas, he perfected the existing tactics of the handling of guns. His doctrine can be summarised as effecting a breach at a decisive point by sheer weight of artillery fire and exploiting the breach rapidly and with certainty by pushing in reserves of all arms. No other commander of that period had been able to master so effectively a principle so simple and straightforward. This brute use of guns, blasting breaches through masses of men became the established practice during the ensuing period.

RIFLING AND BREECH LOADER

After Napoleon the art of tactics developed very little but tactical formations and the employment of three arms underwent considerable change. With the improvements of weapons of war during the second half of nineteenth century were the introduction of rifling and the invention of the breech loader. With the introduction of rifling the barrel increased the range and accuracy of both musket and cannon. The improvement in the character and ballistic properties of explosives lent an added impetus to this process. Bullets travelled faster, further and straighter. The consequent changes were at once apparent in tactics in all spheres. Cavalry ceased to have much value as a striking arm and was finally relegated to the sole duties of scouts, though cavalry charges remained in vogue amongst great many die-hard generals. The advent of the breech loader on the

field of battle revolutionise the minor tactics of infantry. Besides increasing the fire effect of muskets by quickening the rate of fire, it enabled the infantry man, for the first time in history, to use his weapon in a prone position. It enabled soldiers to fire, and continue to fire from a prone position, thus offering to the enemy a very much smaller target. The distinction between light and heavy infantry gradually disappeared. In the face of increasing fire effect, the dense formations of infantry began to disappear. Infantry tactics became, in effect, a series of skirmishes in concealed or dispersed positions.

FIRST WORLD WAR

First World War marked the beginning of Machine Age. During this period came in use many new weapons of war—machine guns, trench mortars, grenades, tanks, gas shells etc. The minor tactics of all arms were revolutionised. Even the services acquired new principles of function in keeping up with their modernised equipment.

The first feature which gave the war of 1914-18 its unprecedented nature was the numerical strength of the combatant armies and the vast quantities of materials at their disposal. The industrial development of Western European countries together with their foreign investments, increased their financial capabilities beyond all recognition. With these enlarged resources they were capable to wage war on unprecedented scales. The allies attained a numerical strength of over 9,000,000 even without including Russia. Germany alone put over 5,000,000 men on the field.

In the field of tactics the weapons which caused the most marked effects were the machine-gun and the quick firing field gun. Just as the breech loader rifle had curbed the exploits of the heavy infantry of the line, so the machine and the quick firing field gun in turn disrupted the existing tactics of modern infantry. They proved too strong for the attackers who were compelled to seek safety behind wire entanglements and in trenches. All armies then went to earth because to live on earth had become impossible. With the fire power quintupled, fronts became unassailable therefore flanks alone could be attacked. This led to the ever lengthening of the battle fronts until, as in France in 1914

MAIN OPERATIONAL TYPES OF GERMAN TANKS



Modern tank design has been a compromise between various conflicting factors — armament, protection, speed, weight, and manoeuvring power. German experts preferred “general purpose” machines to separate cruiser and infantry tanks. Above are shown the four main types of German tanks. The Mark VI (or “Tiger”) is an especially formidable machine. (P. Z. K. W. stands for Panzer Kampfwagen — or armoured fighting vehicle).

one flank struck the English Channel and the other the Swiss Frontier.

MASSED ARTILLERY — PROBLEMS

The problems which faced the tacticians were two-fold the protection of infantry from machine gun bullets, shrapnel and shell splinters and the mastery of wire obstacles. Finding no other solution, the employment of mass artillery was decided upon. Armies vastly increased the proportion of their guns, the size of their guns and the quantity of their ammunition. Vast areas were blasted with thousands of shells, hours before any offensive was taken by the infantry. The number of casualties inflicted became very high but this method failed to supply the solution to the existing problems for three reasons. The first was the lack of control in ammunition expenditure. Artillery barrages were calculated on gigantic scales and ammunition supply became extremely complicated. Great difficulty was experienced in keeping the second echelons of guns supplied with sufficient ammunition to maintain the secondary barrage. Consequently all operations had to be carried on on very limited objectives. Secondly the massing of the artillery fire and the nature of the 'box barrage' sacrificed all surprise. The enemy were given ample opportunities for massing their reserves for the counter attack. The limited range of artillery could not interfere with the movements of reserves behind the front lines. Battles, therefore, began to be planned for the destructive effect of the artillery arm rather than to gain any tactical advantage by infantry movement. The third reason for the failure of the massed artillery to provide solution was that this policy of blasting extensive areas with heavy artillery led to the creation of a further obstacle for the attackers themselves. The 'crumpled area' proved as formidable a hindrance to the continued advance of artillery and the supply services as uncut wire had done to the infantry.

TANK

The real solution to this state of tactical stagnation came with the invention of the tank. The tank combined the principles of mobility and security. Its bullet proof armour gave its crew protection from small arms fire and shrapnel and its tracks enabled it to negotiate the intricate nature of trench-ridden defences sited behind wire obstacles. As it

was bullet proof, the tanks, unlike infantry whose flanks were pushed inwards by the enemy fire, could face fire and therefore move outwards. Consequently, in a tank attack of penetration, it was not necessary to launch the initial attack from a wide frontage in order to establish a narrow final gap. On the contrary the procedure was exactly reversed, for the tank could attack on the narrow front and by wheeling right and left widen the gap as it proceeded. This power to move outwards, instead of being pushed inwards, revolutionised the entire tactics of the attack, not only in trenchfare but in field warfare also.

The tank made its first appearance at the battle of Somme in July 1916, but it was an abortive effort. Its tactical employment had not been fully considered, crews had not been given the careful training required by the introduction of a new weapon and no modifications in the system of intercommunication or supply had been introduced. It was not until Arras, April 1917 that tank co-operation had been established on sound principles.

The breakthrough made possible by the employment of tanks and the limitation of artillery in range and mobility brought about a change in defensive tactics towards the end of 1916. Before then the dominant factor in the defence was the strength of the first line, the second, the third and successive lines merely serving as supports in depth. Conforming to the new attack tactics of tank support, the Germans changed their system of defence to that of maintaining strong reserves in the second and third lines at the expense of the first and using the area between the first and second lines as 'killing ground.' This was a great step towards the conception of area defence as we know it today.

To overcome these new German defensive tactics several new modifications were introduced in offensive. The best example of this was the battle of Cambrai, November 1917 (where tanks were correctly used for the first time). The greatest tank battle of the First World War, that of Amiens launched on August, 8, 1918 was first conceived as an Arbel.

Thus by means of tanks shock action was reinstated. With it generalship which during the great artillery battles had sunk to quartermastership....a question of supply and

administration, came back into its own. Man not material was again to rule the battlefield.

GAS

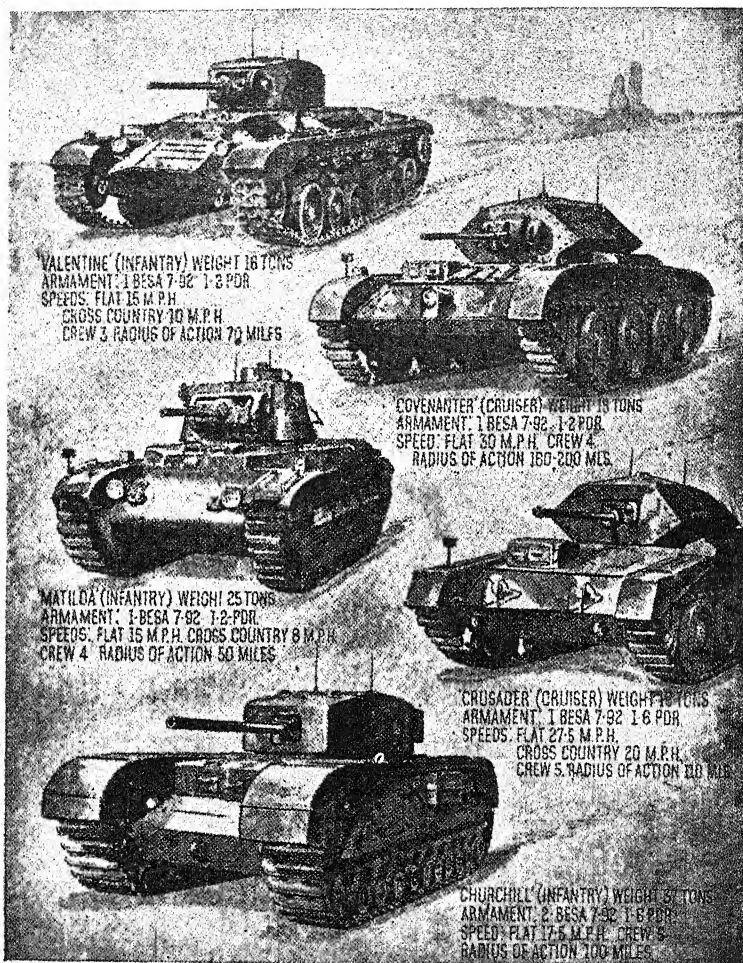
A new feature of the 1914-18 war was the introduction of gas. Although gas is essentially a weapon of chemical warfare, it is not often realised that the use of gas was a direct result of the evolution of projectile tactics. In the nineteenth century state of warfare artillery fired at direct targets with solid shot. With the increase of artillery ranges and the consequent high trajectory indirect fire of guns, came the necessity for the radius of effect to be increased so that the difficulty of locating pin points could be overcome. The radius of effect of solid shot was increased by replacing it with a hollow one filled with high explosives. When targets receded further into distances and were made less vulnerable by being dug into trenches the most effective way of hitting them was provided by the gas shell which not only inundated the extensive areas but also percolated into trenches and underground shelters. In effect gas extended the danger zone of the projectile.

POST WAR PERIOD

When the armistice of November 11, 1918 was signed, Great Britain, France and the United States had an enormous tank programme which entailed the building of 8,000 tanks and 10,000 cross country supply vehicles. But no longer had the hostilities ceased than, with the exception of a few rudimentary additions, their armies beat a hasty retreat to their 1913 organisations and doctrines.

In Britain a small group of tank enthusiasts put forward their ideas. They held that reinstatement of shock action would not render battles highly mobile but that the ability to move in all directions would spell the doom of linear tactics by rendering what they called 'area warfare,' possible. The heart of their doctrine as set forth in 1929 edition of *Encyclopaedia Britannica* 'The decisive point of attack will again become the rear of the enemy's army the approach will be made rapidly not only by road but across country; consequently the nature of strategy will be changed. Area warfare will replace linear warfare and fronts may be anywhere'. Though, little by little, the ideas of this school roused some interest in the British Army the pacific mood into which politics had fallen prevented the new yeast raising the old dough.

BRITISH TANKS



In the British army, tanks have been designed in two main types — cruiser tanks in the armoured division and infantry tanks to work with the infantry divisions. The two pounder guns of the earlier tanks were found to be too light in hitting power and a 6-pounder gun was later used.

In France the future of the tank was petrified by Marshal Petain in a memorandum issued in early 1919 which laid down. 'Tanks are . . . an infantry arm working in the midst of the infantry. The employment of tank units in the midst of and in front of the infantry calls to the attachment of these units to the infantry . . . Besides, it is an arm of the future destined perhaps one day to become synonymous with infantry.' The upshot was that French Military Thought continued to be interested in the idea of lines. The next war, it was held, would tactically be as linear as the last one, therefore it would be governed by the defensive, because the purpose of line is to develop bullet and shell power and not assist the movement of armour. The French General Staff therefore continued to think in terms of wide fronts of attack and not in narrow fronts. Though in the Maginot line they built an immense shield they failed to force a powerful sword to co-operate with it. Had they done so that line would not have passed into military history as a monumental folly.

In the United States, as in Great Britain official interest in tanks all but vanished with the end of the first world war. Fortunately, however, much useful experimental work was carried out, some remarkable track cum wheeled machines being designed by Mr. J. Walter Christie and produced by U.S. Wheel Track Layer Corporation.

In Russia and Germany, however, the interest in tanks was intense. In the first instance because machine warfare fitted into the machine civilisation aimed at by Lenin and the second because the frustration imposed by the Treaty of Versailles, instead of allaying German military fervour, went far to stimulate it.

Two men who most considerably influenced the development of German armoured forces were General Ludwig Ritter Von Eimannsberger and Col. Heins Guderian. Their suggestions and those in conflict with them were still in a state of flux when the Spanish Civil War broke out in 1936. This provided the German General Staff with a testing ground . . . Spain was the tactical laboratory of the Second World War. Of the many lessons learnt, two of the more important were the co-operation of the dive bombers or stukas with tanks and the use of A.A., or the Flak artillery more specially the 88 mm. gun, as anti-tank

AMERICAN TANKS



The American tanks though their armament was good, were unable to swing their guns through a complete circle. This much handicapped their powers of manoeuvre and the fault has been remedied by installing power - operated turrets with a 360° traverse. The Canadian tanks-the "RAM" is a good machine, combining some of the best British and American features. As with warships, designers have to balance armour-hitting power and speed.

artillery. In 1937 General Emmansberger wrote 'The tank attack must be carried out as intensively as possible, therefore the enemy's counter fire must be silenced in the shortest space of time ordinary artillery batteries are not suited for this purpose the gun must be replaced by aeroplane.'

From the beginning of 1937 'Flak artillery was used more and more in ground warfare, for which its precise aim, its rapid fire and its range made it specially suited This led finally to the use of Flak in the last great offensive of the Spanish War, in Catalonia in the following proportion : of the total ammunition fired by these guns 7 percent was against the air targets and 93 percent against ground. Thus used, the Flak guns normally preceded the attacking infantry and were towed into action by tanks. The whole of German 'Stuka-Flak-Panzer' tactics were thoroughly tested out in Spain.

SECOND WORLD WAR

What, on the outbreak of the Second World War, the German Armoured strength was, is not exactly known. Probably ten armoured divisions were in existence and others in formation. In Britain only one was in the process of being raised, parts of which took the field in France in May 1940.

In the first World War, although tank had caused the restoration of mobility in tactics, it could not be said to have been a mobile arm in the same sense as Cavalry. Tanks were used essentially as movable armour-protected machine gun platforms. They moved at infantry speed as a support for the infantry. It is true that by 1918 the speed of the Whippet tank had increased by three or four times; but this increased mobility could not be successfully exploited because the controlling factor in speed was still the pace of the marching infantry. The armoured battle aspect tank tactics had not evolved. It was not until the battle of Aragon in 1938 that the tactics of armoured warfare was first seen on the field of battle. At this battle the Germans for the first time, made proper use of the mobility of the tank. The main problems that had faced the advocates of tank based mobile warfare were the inadequacy of support and difficulty of occupation of ground. The old artillery was not sufficiently mobile to follow up a swift tank break-

MAIN OPERATIONAL TYPES OF RUSSIAN TANKS



As with ships at sea-the gun of a tank must beat the enemy's armour; yet its armour must beat the enemy's guns. Heavy armour and guns slow down machines. Above are shown the main types of Russian Tanks. The K. V. II is heavily armoured and armed. Its gun is of 6-inch calibre but its cross-country speed is low. (K.V. means "Klim" Voroshilov),

through and infantry could not be moved up fast enough to occupy the ground made by the tanks. The answer to the first came with the mechanisation of Cavalry and more forcibly with the use of aircraft for tactical co-operation in particular the dive bomber. Aircraft assumed the role of flying artillery and was able to keep pace with the fastest tank advance. The answer to the infantry problem was supplied by the improvement in mechanical transport. Complete divisions of infantry began to be lorry borne and could advance at any speed dictated by the tanks, and dismount for ground action.

These developments led to a revision in the tactics of fire and movement. In the war of 1914-18, it was proved that the effect of fire divorced from the moment, as exemplified in the artillery barrage tactics, could be extremely destructive but seldom decisive. However heavy the shelling, the final victory could be confirmed without action by troops on their feet. The Germans pursued this conclusion further and in the intervening period of peace between 1918-38 developed the tactics of fire and movement to what came to be known as blitzkrieg tactics. The new theories were given their trial in the Spanish Civil War. By a process of trial and error, exact calculations of weight of attack compatible with the depth of gap, speed of movement and so forth which could bring to these tactics maximum success were formulated. These theories of infiltration and blitzkrieg opened up a new phase in warfare and became the basis of modern offensive tactics. It influenced the movement of sections and armies, it spread from minor tactics to strategy.

It was evident that the sensational victory of the German blitzkrieg should bring about a radical transformation of the principles of defensive warfare. Hitherto the old concept of linear defence had been adhered to by conservative military thinkers in Britain and France. Such defensive system as the Maginot line, while embodying all the latest products of scientific progress, nevertheless epitomised the underlying policy of linear defence a continuous line of fortifications through which enemy penetration could not be permitted. The weakness of linear system at once became apparent during the German offensive in France and the stage was set for a revolution in the tactics of the defence.

The German tactics were to probe the enemy's defences to find their weakest spot, effect a breakthrough with massed armour on a narrow front, and maintain the momentum of the breakthrough with an all-arms support. The gap itself was widened at a later stage. The first was to disintegrate the enemy in the rear. It was appreciated that the tanks themselves could not achieve permanent success. The attackers could only win victory if the infantry and supporting arms could be rushed up straight away. The first task of the defence therefore was to separate the armour from the following infantry in order to prevent either of them from being able to support the other. In other words defence was to offer resistance even after the break-through. If this could be done not only the armour lost the infantry support but was deprived of its vital administrative life-line petrol, supplies and ammunition the defenders could then deal with the invaders piecemeal. This was the basis of the new 'area system' or the 'web defence'. The defence hereafter was not based upon consecutive lines but on areas of resistance sited in the greatest possible depth, constructed for all round defence and capable of fighting for long periods even after they had been surrounded. Each 'island' in this network contained weapons sited in anti-tank localities, capable of covering not only the anti-tank obstacles but also the areas between the localities. This system of defence was the first real problem that Germans were faced with in their invasion of Russia in 1941. The Soviet armies had not actually organised the 'web defence system' but as soon as they countered the German blitzkrieg tactics they at once put into practice on a national scale. The Germans had driven two wedges through and round the Russian armies and in a pincer movement had joined these two wedges. The cut off island of the Russian defenders, however, continued to resist from these areas and refused to surrender. Civilians were armed and joined with the Forces to form guerilla bands. The result was that large bodies of German troops had to be left behind to contain these isolated citadels of resistance.

The main principle on which the success of both blitzkrieg attack and the area defence system depended was co-operation. More than ever before the mutual support of arms had become necessary.

COMBINED OPERATIONS

The idea of combined operations was no sudden or new discovery. The Norman invasion of England in 1066 was a combined operation. In its modern concept it was the highest conception of the principle of co-operation, the elevation of the principle from an inter-arm to an inter-service level. Air support became essential requisite for all ground tactics. The demand on the air arm grew greater with the increase of parachute and air borne troops, and air supply. In operations along sea coasts and in overseas invasions the close co-operation of the Navy was enlisted. To generalise, all operations became potential combined operations, the air arm in particular being indispensable to the land forces over any type of country jungle or desert, mountain or plain. The essential fighting body required to win the future battles was therefore 'the combat team'.

It was on June 23, 1940 that the first raid on the coast of enemy occupied France took place. Carried out for reconnaissance purposes by commando troops landed from the sea it was successful in obtaining some valuable information of the enemy's movements. On 4th, March, 1941 far more comprehensive combined operations took place the first raid on the Lofoten Island, off the coast of Norway well within the Arctic Circle. On the 25th August, 1941 a combined operation was carried out at Spitsbergen in the Arctic. Spitsbergen being rich in coal it was considered probable that Germans would use it for their war effort. It was decided to destroy mines and remove stocks of coal and to remove the miners and their families who would have lost the means of their livelihood. Another combined operation took place in Vaggaso in Norway on December, 27, 1941 with the object of destroying a number of military and economic objectives, particularly shipping. The next big combined operation was the raid on St. Nazaire in March, 1942. The object of this raid was to remove a serious danger confronting the allies in the battle of the Atlantic. On August, 1942, there took place a combined operation of an entirely different character. This was the big raid on Diepe which was officially described as 'reconnaissance in force'. It took place in daylight against one of the most strongly defended parts of the German occupied Europe. A far larger number of men

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were landed than ever before and a far larger number of aircraft and naval units were employed. It was in fact a probing thrust at the enemy's strongest defences and as such a rehearsal for invasion. The lessons learnt here formed the basic material for the first large scale landing staged 98 days after when allied forces landed at eleven points in French North Africa as well as storming Casablanca on the Atlantic coast of French Morocco. Meanwhile small raids for specific and limited objectives continued. In September 1942 a combined operation took place on the Norwegian coast. This was different from raids which had taken place up to that time. On the 3rd October, 1942 a raid was carried out on the Channel Isles in order to discover whether there was any truth in the rumours that channel Islanders were being deputed by the Germans for slave labour. The raid was successful. From the Naval point of view the Allied landings in North Africa constituted the most important operation in which eight hundred ships were concerned in the original landing in the Mediterranean alone. These ships had to be assembled, stored and loaded in secret, foiling all the attempts of extensive German reconnaissance over the United Kingdom. They had to be grouped when well out at sea into various convoys allocated to particular destinations. These great convoys had to be taken over 1,000 miles through waters infested by U. Boats and frequently covered by German air reconnaissance, without the enemy being able to attack them or realising what was afoot. The invasion of North Africa not only altered the whole strategic base of the war but provided valuable experience and lessons for invasions on larger scale. Each of these was useful as a means of gaining hard experience in preparations for the greatest military campaigns later undertaken the invasions of the fortress of Europe.

Like the intervening period between 1918-39 and inspite of all the declarations for peace and efforts for disarmament the post war period is being used by big military powers for further research in and development of firing power. Like the tank and aeroplane before the last war the emphasis now is on nuclear weapons the atomic and hydrogen bombs. It can not be said as to what exactly would be the shape of things and events when the next global war breaks, if at all it does because there are powerful forces

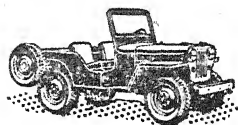
working to prevent it on account of its unimaginable destructive capacity. All powers, big or small, have in the meantime to remain prepared for all that may come up any moment.

The world has had nearly ten years of peace. During this period desire of peace and orderly progress of mankind has been repeatedly expressed by the Governments and the peoples in most unmistakable terms. But still their remain points of conflicts and explosive areas. There have been a number of minor wars already. There may be many more and it cannot be said which will lead to general flare up. In the name of 'self defence and in the name of peace', therefore, this intervening period, like the one after the last war, is being used for further researches and further development in the fighting power. Emphasis now is on the nuclear weapons and already several new aircrafts have been invented and tested with much greater speed and capacity than could be imagined during the last war. More and more powerful atomic and hydrogen bombs have been perfected and put to test. The next war, as and when it breaks out, will reveal to the surviving humanity new weapons of unlimited power of 'death and destruction' and new scales of organisation, conduct and command of the war machines.

PART II

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HISTORICAL DEVELOPMENT

India's Armed Forces have a history and tradition rooted deep into remote antiquity to the days when her soldiers turned back the 'sataraps of Babylon from the Indus and when her ships dominated the Eastern seas as far as Malaya and Java. These martial traditions have been upheld by successive generations of her sons and there has not been an occasion when the Indian soldier has not distinguished himself in action. These traditions have, with the coming of freedom, been further infused and revived with a new spirit and during the past eight years that India has been free the Indian soldier has stood guard to the hard won prize of national freedom and has successfully resisted all encroachments on free national life.

ARMY

Of the three arms, the Army figures most prominently in our long and eventful history. This goes back to the days of Gupta and Maurya Empires. Recent instances are the Maharattas under Shivaji and the Sikhs under Maharaja Ranjit Singh. Highest tributes to the Khalsa army of the Lion of the Punjab have been paid by late Mr. H. L. O. Garret who said : 'the three Sikh wars were the bloodiest encounters that the British in India had to face'. Although both the Maharattas and the Sikhs lost to the British and had later to serve under their flag yet the martial qualities of the Indians lived to impress the most outstanding of the military minds in the world. The Indian Armed Forces, as they are known to us today, however, had their birth at the hands of the East India Company.

EAST INDIA COMPANY

The first purely Indian troops of the British era had their foundations in the formation of watch-keepers employed

by the East India Company to protect their trading stations. These evolved into battalions, and eventually, as military responsibilities of the Company grew, into the three great Presidency Armies of Bombay, Madras and Bengal, each more or less, separate entity which was made necessary by the conditions of communication and terrain. In 1748, however, they were placed under one Commander-in-Chief. The first father of the Indian army being Major Stringer Lawrence. From this appointment onwards the Presidency Armies showed continued all round improvement. This appointment in fact constitutes the first link in the long chain of the consolidation of the Indian Army.

The year 1754 saw the arrival of the first Royal Troops in India since the time the Island of Bombay was garrisoned by Royal Troops before its cession to the Company. Their arrival introduced into the existing army a new element. It was thereafter divided into Kings Troops, Company's European Troops and Company's Indian Troops. This arrangement continued for more than one hundred years.

Shortly before the battle of Plassey, Clive began to reorganise the Indian troops under his command by forming them into regular battalions and arming and dressing them in a fashion somewhat resembling that of the Europeans. Prior to this, Indian troops adopted their own weapons and dress and were officered by their own kin.

The regimental system on a two-battalion basis was introduced between 1796 and 1804. It was not satisfactory. The battalions though theocratically linked were not mutually interdependent and had no common *esprit de corps*. Control by the regimental commander was excessive and exasperating to the battalions, while owing to the increase in the number of British Officers the authority and dignity of the Indian officers was diminished. Many think that in this system were the foundations of the Great Mutiny, a crime with which both the Madras and Bengal armies had not been unfamiliar, including Madras European officers.

Single battalion regiments were reverted to in 1824 and the units were numbered according to the dates. The most conspicuous defect of the earlier days, the high proportion of British officers, was however, continued.

About this time, corps recruited for a particular locality, as well as irregular cavalry came into existence. The latter

was organised on the indigenous system of the local rulers known as the *Sillidar*, whereby for lump sum down and a maintenance grant, the man provided his own horse, weapons and such military attire as was considered necessary. The number of British officers was kept at a very small minimum. Regular regiments of cavalry were formed about 1784.

With the expansion of territory under the Company a new difficulty arose. The armies of one Presidency were often employed on service beyond the Presidency frontiers with the troops of another and with the establishment of peace, left there in garrison. As a consequence, the allowances for field service were withdrawn. Men detailed for service outside their own presidency not only objected to serving so far from their homes but considered such service entitled them to special compensatory treatment. To meet the difficulties involved in arranging for the occupation of newly acquired territory one of the expedients adopted was to raise local bodies of troops for a particular service in particular localities. Of these the most known are the Hyderabad Contingent and the Punjab Irregular Force which afterwards became the Punjab Frontier Force.

UNDER THE CROWN

On 1st November, 1858, by a Royal Proclamation, Queen Victoria assumed the direct government of India and the East India Company ceased to exist. All the Company's troops were therefore transferred to the Crown. Immediate effect of this was that one hundred years old distinction between the 'Royal Troops' and 'Company's European Troops' disappeared. The reorganisation of the British forces was not completed till 1860 but it was decided that between the 'Royal Troops' and Company's European Troops' establishment in India should not exceed 80,000 men. In 1861 a general reorganisation of Indian Troops was taken in hand. Some cavalry and infantry units were disbanded, others were amalgamated and all the Indian artillery, with some exceptions, were abolished. All the cavalry was then organised on the *Sillidar* system, except the three regiments of Madras Army, and the number of British officers was reduced. Another notable feature of the same year was the introduction of the three Presidency 'Staff Corps'.

Composition of the Army in India serving in the Three Presidencies immediately prior to the Mutiny of 1857.

EAST INDIA COMPANY'S TROOPS														TOTAL.	
Royal Troops	Royal Troops		Engineers and Sappers.	Artillery.			Native Cavalry		Infantry.			Medical Establishment.	Warrant Officers.		
	Cavalry & regiments.	Infantry regiments.		Horse & brigades.	European Foot. 12 battalions.	Native Foot. 6 battalions.	Regular 21 regiments.	Irregular 23 regiments.	European 9 regiments.	Native regulars. 113 regiments.	Native irregu- lars 43 regiments.				
Officers . . .	115	693	251	119	231	138	284	106	335	2769	152	814	6,170	..	..
European Non-com- missioned Officer's Rank and File.	2,571	20,884	110	2,029	4,390	37	60	..	8,103	259	59	..	38,502	..	..
European veterans .	..	..	..	..	..	..	..	..	..	..	..	..	465	..	..
Native commissioned Non - commissioned Officer's Rank and File.	..	..	3,043	659	..	3,517	9,532	20,941	..	149,832	35,215	..	226,352	..	..
Gua lascars . . .	..	..	..	449	1,658	343	..	..	..	..	..	..	2,450	..	..
Ordnance drivers .	..	..	..	..	1,489	848	..	..	..	..	..	..	2,337	..	..
Apothecaries and Stewards.	..	..	..	..	..	..	..	..	..	..	..	434	434	..	..
Native doctors . .	..	..	..	..	..	..	..	..	..	..	..	651	651	..	..
Warrant Officers (Ordn- ance, etc.).	..	..	..	..	..	..	..	..	..	..	..	..	385	385	..
	2,686	21,577	3,404	3,256	7,768	4,883	9,876	21,047	8,438	152,860	35,426	1,899	277,746	385	385
	24,263	15,907	3,404	15,907	30,923	15,907	30,923	15,907	196,724	4,241	4,241	1,899	277,746	385	385

A commission of enquiry set up after the Afghan War of 1878-80 recommended abolition of the Presidency Armies. Although the ordnance, supply, transport and pay branches had been or were then being unified, the main unification for a variety of reasons did not take place. In 1886 a further step was taken when the Punjab Frontier Force, then under the control of the civil authority, was transferred to the Commander-in-Chief. Also in the same year infantry battalions were grouped generally in pairs and given permanent centres at which one of the two could be located to serve as a draft finding unit for the other in war. Recruits were thenceforth enlisted for the group, though the battalions were not made components of a regiment. A certain bond of mutual interest was thus created but the defect was that one battalion could only be reinforced at the expense of the other. At the same time a reserve for the fighting units was created, service therein being voluntary. At last in 1895, after many alternatives had been considered, the Presidency Armies with their separate organisations were abolished and geographical area commands established. But the units were still to be localised in their peace garrisons and the area commands were still to be as separate from each other as the Presidency Armies had been.

UNDER LORD KITCHENER

More drastic measures were wanted to properly complete the unification of the Indian Army. Lord Kitchener who assumed the Commander-in-Chief in November 1902, wasted no time and carried out the following changes :-

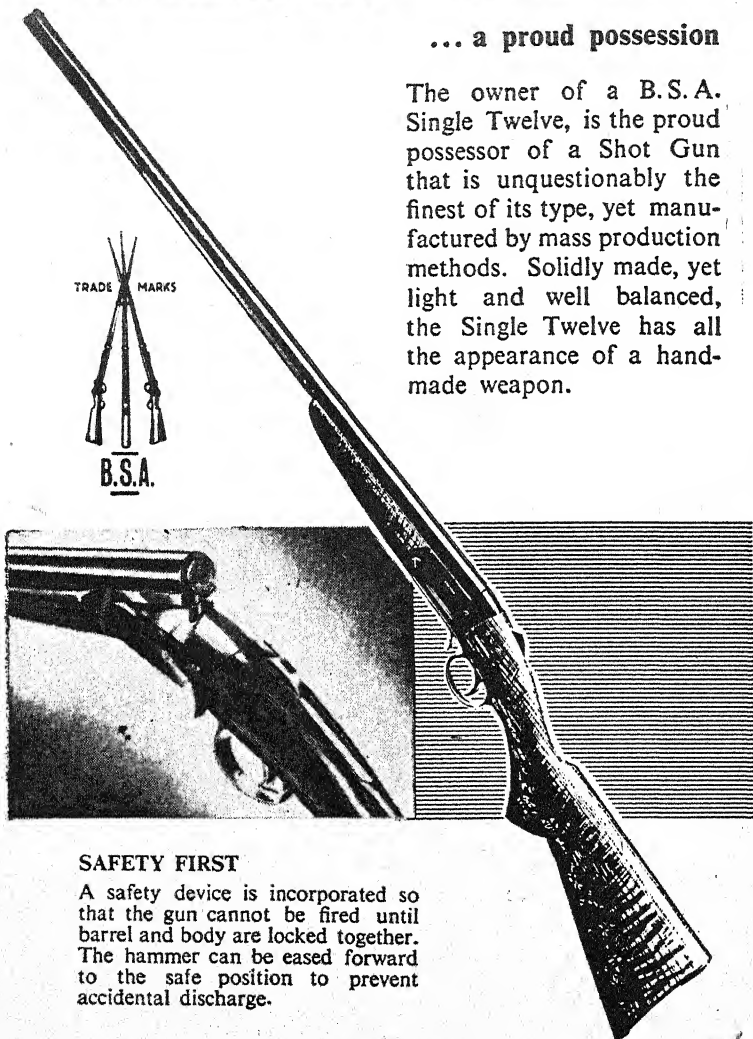
1. On the first January 1903 the designation 'Indian Staff Corps' was abolished and officers belonging to that corps were designated 'Officers of the Indian Army'.
2. On the 9th January, 1903 the Burma 1st Class district was separated from the Madras command and constituted a separate independent command and designated 'the Burma Command'.
3. With effect from 1st April 1903 the Hyderabad Contingent was broken up and delocalised. One cavalry regiment the 3rd Lancers, Hyderabad Contingent, was absorbed into the other three which were transferred to Bombay Command, while the infantry regiments were transferred to Madras Command.



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4. On the same date the Punjab Frontier Force and Frontier District and its territorial areas were distributed between the Peshawar, Kohat and Derajat Districts.

5. On 2nd November, 1903 the new designation and numbers of all units of the Indian Army were published and ordered to have effect from the date of the order. On 5th November, 1903 Lord Kitchener's proposals for the reorganisation of Indian Army were communicated to the Government of India. Four great principles were enunciated in the proposals. They were :—

1. That the main function of the army was to defend the North West Frontier against an aggressive enemy.
2. That the army in peace should be organised, distributed and trained in units of command similar to those in which it would take the field in war.
3. That the maintenance of internal security was a means to an end, namely to set free the field army to carry out its functions.
4. That all fighting units in their several spheres, should be equally capable of carrying out all the roles of the army in the field and that they should be given equal chances in experience, training and bearing of these roles.

FIRST WORLD WAR

Lord Kitchener's scheme had not been completely carried out by 1914 finances did not permit. But Lord Kitchener's principles had been carried far enough into effect to enable India to promptly more than pull her weight in the team of armies of the British Commonwealth in the world war. On August 1st 1914 the total fighting forces of India were 155,000. By November 1918 they had reached 573,000. The latter number included large Indian armies serving in Palestine, Egypt, Iraq, Salonika and elsewhere. India, however, paid for her normal army. The remaining troops were regarded as fighting the Empire's battles and were paid for by the British Government.

The exceptional character of the war and the strain it imposed upon the resources of every country engaged in it,

revealed, however, even greater defects in the organisation and grave defects also in its equipment. The first and foremost serious defect was that the ancillary services of the Army were either non-existent or under developed. On this account seven of the nominal complement of nine field army divisions were actually capable of immediate mobilisation. Peace establishments were generally so inadequate that to effect mobilisation of the war divisions internal security units had to be largely depleted. Technical and administrative personnel required on mobilisation had to be found from the establishment of combatant units. On the other hand the standard of equipment in the Indian army before the war was so low that the Indian military forces were at a grave disadvantage when they found themselves fighting in conjunction with troops equipped on modern basis. Neither the Air Force nor the Mechanical Transport service existed, while technical equipment, generally machine guns, artillery, hospital equipment and medical establishments for the Army in India was in a markedly inferior condition to the European armies. The divisional artillery was inadequate to modern requirements and the so called heavy artillery was obsolete. The worst, however, was that India's own resources had not been sufficiently developed and she was, therefore, mostly dependent on outside sources of supply for munitions of war.

THE IMPERIAL SERVICES TROOPS

For many decades the Independent rulers, as well as the states feudatory to British India, maintained large armies systematized, to some extent, upon European lines and commanded or organised in many cases, by European officers, some just soldiers of adventure, others lent by their Governments for the purpose. The names of De Boigne of Gwalior, Raymond of Hyderabad, Avitabile of the Sikhs, Perron, Gardner, Skinner, are all familiar to the students of Indian history of the eighteenth and nineteenth centuries. Some of these troops were led against the British, others fought by their side and in the forces of Principalities were latter found regiments bearing honours for Laswaree, Bhurtpore, Kabul 1837, Moodkee, Mooltan, Delhi, 1857, Lucknow, Afghanistan 1878-79 etc. In fact almost every Indian campaign since the East India Company's Government was established had seen a contingent of some state or other serving alongside the troops of the paramount power.

It was the excellent services rendered by the Punjab States, as well as those of Rajputana and others, which enabled the insurgent soldiery to see the error of their ways (British viewpoint) during the mad months of 1857-58.

It was the Penjdeh incident of 1885 which brought home to the ruling princes the consequences to them of a Russian penetration of India with a view to securing the supremacy of government. The war which seemed likely then was happily averted, but it emphasised the desirability of organising the forces of the Princes so that they could be utilised in the defence schemes of the country.

Thoughts in this direction became definite when His Exalted Highness the Nizam offered a considerable sum from the revenues of his Hyderabad Dominions as a contribution towards the defence of the N. W. Frontier on the occasion of Queen Victoria's Jubilee in 1887. This, as would be natural, led many other rulers to follow suit. The Government of India, however, decided that the assistance by the states against foreign aggression could be better afforded in man power. A scheme was therefore evolved by which certain units of the small armies of the Princes could be earmarked for the defence of the Indian Empire and trained to a standard which would make them efficient to stand in battle line with the regular Indian troops. Thus arose the Imperial Service Troops as distinct from the feudal forces of the State.

By 1889 the movement was well under way and units of cavalry, infantry, engineers, transport corps, to say nothing of the unique Camel Corps of Bikaner—all officered by Indian gentlemen and financed at the expense of the States had come into being. Training was supervised by officers lent from regular Indian Army, while schools of instruction for the Imperial Service Troops were started.

Kashmir whose frontier marches with that of Russia, undertook to maintain two batteries of mountain artillery. And it was the Imperial Service Troops of the Maharaja who first earned glory and showed that the experiment had more than the germ of success in the difficult Hunza-Nagar campaign of 1891 and later in the gallant defence of the Chitral Fort in 1895. In the Great Frontier War of 1897, units of the Imperial Service Troops of Gwalior, Jaipur, Jind, Kashmir, Malerkotla, Nabha, Sirmoor and Patiala all



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took part, as did the Kapurthala Jagajit Infantry, a detachment of which greatly distinguished themselves and gallantly perished to a man when cut off and overwhelmed by savage and merciless tribesmen in the Kermana defile. Alwar, Bikaner, Jodhpur and Malerkotla sent detachments to serve with the International Force in China during the Boxer Rebellion of 1901. In 1902, Indian troops were engaged in Somaliland and on hearing of the urgent need for mounted troops, the Maharaja of Bikaner offered a strong contingent of the Bikaner Camel Corps for service on the African continent.

By 1914, Imperial Service Troops of various States had reached an approximate total of four companies of engineers, two mountain batteries, nearly fifteen regiments of cavalry, three camel corps, thirteen infantry battalions and seven transport corps. When war came that year the Princes immediately offered the whole of the resources of their states. Of the 22,000 Imperial Service Troops then existing some 18,000 served overseas. And throughout the four odd years of the war they were maintained in the field at the expense of their Rulers.

POST WAR PERIOD

The lessons of the war were too clear to be neglected and when the war came to an end, the military advisers of Government were ready to embark upon a definite policy of reorganisation and reform. The task could not be commenced immediately, since after the armistice large bodies of Indian troops continued to be employed on service in the mandated territories and other overseas theatres while the Government of India was further preoccupied by the outbreak of the third Afghan War and the operations in Waziristan. In 1919, however, a strong Army in India Committee was appointed, Lord Esher being president, with the following terms of reference :—

1. To enquire into and report, with special reference to 'post bellum' conditions, upon the administration and where necessary, the organisation of the Army in India, including its relations with the War Office and the India Office and the relations of the two offices to one another.

2. To consider and to report upon any other matters which they may decide are relevant to the enquiry.

3. To consider the position of the Commander-in-Chief in his dual capacity as head of the Army and member of the Executive Council and to make recommendations.

The committee presented their report towards the close of 1920. About the same time General Lord Rawlinson became Commander-in-Chief in India; it had also become possible to assemble at Army Headquarters a staff composed largely of officers who had gained distinction and invaluable experience during the Great War and under these auspices the process of reorganisation began to take a practical shape. The general scheme which was evolved had a wider scope than recommendations of the Committee, since the terms of reference to that Committee had been limited and apart from this, there were many questions both of principle and details which it was impracticable for the Committee in the time at their disposal to take fully into consideration. It is, however, important to state that the Esher Committee were largely responsible for improving the terms of service of the Indian ranks of the Army in India and for placing the improvement on a firm basis. The Indian soldier and Indian officer with the Viceroy's Commission were, as a result of this Committee's recommendations, fed, clothed, housed and in the mounted branches, horsed by the State, on an adequate standard and their pay and pensions were assessed on a scale which proved to be sufficient to obtain the required number of recruits and to secure efficiency and contentment amongst those recruited.

The fundamentals of reconstruction and reorganisation as put forward by the Committee were :—

1. An improved system of command and distribution of troops.
2. A proper balance between combatant and ancillary services.
3. The organisation and equipment of the army in accordance with modern European standards.
4. The maintenance of machinery in peace to provide for reinforcement and rapid expansion in war.

In framing the structure as a whole and in assessing the

relative strength and value of its several parts, financial limitations were carefully observed.

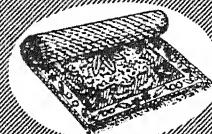
The process or reorganisation, in its more technical and specific aspect, was complicated and laborious. It continued throughout 1921 and 1922. At the close of 1922 the results achieved until then were subjected to the scrutiny of Lord Inscap's Retrenchment Committee. An official publication of the period wrote 'In the economic conditions prevailing in the years immediately after the war, the cost of an army, organised and equipped on standards deduced from the experience of the War, was greater than India could reasonably afford.' From the purely military point of view, of course, retrenchment was unwelcome. But it was satisfactory that the pruning knife of the Retrenchment Committee was applied to an organisation which by that time, was, in conception at any rate, complete in several parts. While the Retrenchment Committee recommended large reductions in military expenditure as a whole, they were careful to suggest that in carrying out their proposals, the military advisers of the Government of India should be given a certain discretion, the object of the Committee being to ensure that in the result no vital service of the Army should be unduly weakened and that if the Army in India were reduced in total strength, it should nevertheless retain the essential features of the organisation of a modern army and the capacity for expansion in war. The Committee had recommended scaling down of Defence Budget which stood at Rs. 62½ Crores to Rs. 50 Crores. This was actually delayed till after the Great Depression of 1930. In addition to minor tinkering by the Army authorities themselves with the Defence Expenditure, the recommendation, demanded automatic savings from fall in prices and other causes and savings to be obtained by spreading the capital expenditure on building over a large number of areas, in addition to savings being obtained by methods of real retrenchment. Actual reduction in the peace time strength of the Army in India was as under :—

Year	British Ranks	Indian Ranks	Total
1914	75,366	158,908	234,274
1923	57,080	140,052	197,132
Reduction	18,286	18,856	37,142

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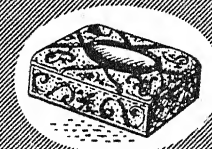
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INDIANISATION

The post war period opened a new phase of activity in India even in respect to the maintenance and functioning of the Army. Whereas the British Government wanted to make the Indian Army a force strong enough to perpetuate their hold on this country and to repel any attack by any foreign power either on India or on any other part of the Empire, which the British Government was committed to defend the Indians demanded Indianisation of the Army in India, proper apportionment of Defence Expenditure between Britain and India and for a reduction of the incidence of the Defence Expenditure as a part of the general expenditure of the country. During the early years of its career the Montagu-Chelmsford Legislature, scored numerous triumphs and even achieved striking results. Sir K. G. Gupta, one of the Indian members of Esher Committee, in his minute of dissent said: 'Ever since the battle of Plassey to the assumption of the direct Government of India by the Crown in 1858, the principle underlying all measures was the maintenance of British domination and supremacy, involving concentration of authority and control, whether civil or military, in hands of the British bureaucracy.' He also said: 'As a legacy of the unhappy events in 1857, a feeling of distrust had further supervened and permeated the whole policy of Army administration. Indians had always been excluded from the King's Commission. A new restriction established in the ratio of two Indians to one European was introduced in the rank and file On the military side, however, the tendency has been to make the grip closer and tighter, so as not only to keep the Indian out of all superior positions, but also to practically exclude them from the artillery and various other services which form essential branches of Army Organisation'. While making a reference to the Parliamentary Declaration of 1917, which postulated responsible government as being the goal of the British in India he argued: 'But if we are to achieve this goal of national unity and full responsible Government it is necessary that the British Government should completely change the angle of vision in regard to military administration in India and they should be prepared to share the control of the Army with the people of this country.' Sir K. G. Gupta made a series of propositions covering a variety of points which were later on taken up by Sir P. S. Siwaswamy in his famous resolutions on Indianisation of the Army in India.

SIWASWAMY RESOLUTIONS

Sir P. S. Siwaswamy, who is regarded as 'the Grand Old Man of South India', though a liberal, had made a special study of the Indian Defence problems, a field almost entirely his own and even though his dialectics were those of a memorialist, he was able to play a tremendous part in the evolution of the basic principles of India's army organisation and financial expenditure thereon.

The resolutions, fifteen in number, were based upon the report of the Esher Committee and the Central Legislative Assembly was able to take emphatic action on all of them, a fact which must look extraordinary today if it is remembered that it was accomplished nearly thirty five years ago.

The first resolution affirmed that 'the purpose of the Army in India must be held to be the defence of India against external aggression and maintenance of internal peace and tranquility'. It repudiated the assumptions underlying the whole report of Esher Committee to the effect that (1) the administration of the Army in India cannot be considered otherwise than as part of the total armed forces of Empire and (2) that the military resources of India should be developed in a manner suited to the imperial necessities. The resolution was passed by the Central Assembly earlier negating the Amendment by Sir Godfrey Fell, the Army Secretary.

The second resolution which was passed without a division ran as:—'The Assembly recommends to the Governor General-in-Council that the Army in India should not, as a rule, be employed for service outside the external frontiers of India, except for purely defensive purposes or with the previous consent of the Governor-General-in-Council in very grave emergencies, provided that this resolution does not preclude employment on garrison duties overseas of Indian troops at the expense of His Majesty's Government and with the consent of the Government of India.'

The third resolution passed by the Assembly was a recommendation to the Governor General-in-Council for the creation of a separate Department of Production and Provision, entrusted to a civil member of the Military Council of the Commander-in-Chief. This was a Minority recommendation of the Esher Committee whereas the Majority wanted an Executive Councillor to hold the post.

Fourth resolution which was accepted by the Government was to the effect that the Commander-in-Chief and the Chief of General Staff India, should be appointed by the Cabinet on the nomination of the Secretary of State for India, in actual consultation with the Government of India and the British Secretary of State for War. It also urged that the Military Secretary to the India Office should be appointed by the Secretary of State for India, after taking the advice of the Chief of Imperial General Staff and that he should ex-officio have the status of the Deputy Chief of the Imperial General Staff in the United Kingdom and under the orders of the Chief of the Imperial General Staff. The purpose of this resolution was to get a proper insight into, and a working knowledge of the day to day activities of the Imperial General Staff so that ultimately no orders were issued from London to the Commander-in-Chief or the Chief of the General Staff, India, and that co-ordination and not dictation became the principle governing India's relationship with the United Kingdom in respect to Army Organisation etc.

The fifth motion adopted was to the effect that the right of the Commander-in-Chief, India, to correspond with the Imperial General Staff, should be subject to the restriction that it does not commit the Government of India to any pecuniary responsibility or any line of military policy which had not already been subject to decision by the latter, and that copies of all such correspondence at both ends should be immediately furnished to the Government of India and to the Secretary of State for India.

The next two resolutions approved by the Legislature dealt with Indianisation. One resolution said 'The King Emperor's' Indian subjects should be freely admitted to all arms of His Majesty's Military, Naval and Air Forces in India and the ancillary services and the auxiliary forces and that every encouragement should be given to the Indian 'including the educated middle classes, subject to the prescribed standard of fitness, to enter into the Commissioned ranks of the Army'. It also demanded the non-official Indians should be associated with the nominating authority and that not less than 25 per cent of King's Commissions granted every year should be given to His Majesty's Indian subjects, to start with.

The second resolution of this group on Indianisation ran as follows: 'Adequate facilities should be provided in India

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for the preliminary training of Indians to fit themselves to enter the Royal Military College, Sandhurst; that as soon as funds become available steps should be taken to establish in India a Military College such as at Sandhurst, and the desirability of establishing in India training and educational institutions for other branches of the Army should be steadily kept in view.'

The ninth resolution which was accepted on behalf of the Government of India was 'in the interest of economy and in view of the likelihood of the growth of the Indian element in the Commissioned ranks 'it is essential before vested interests arise, that the pay of all Commissioned ranks in all branches of the Army should be fixed on an Indian basis, with the overseas allowance for the British Officers and a similar allowance for the Indian Officers holding King's Commission when serving overseas.'

The tenth resolution which raised tremendous amount of discussion was 'in view of the need for the preparation of India to undertake the burden of self-defence and in the interests of economy it is essential that a serious attempt should be made—

(a) to organise and encourage formation of an adequate territorial force on attractive conditions;

(b) to introduce in the Indian Army a system of short colour service, followed by a few years in the reserve; and

(c) to carry out a gradual and prudent reduction of the ratio of the British to the Indian troops.

The Commander-in-Chief intervening in the debate accepted paragraphs (a) and (b), but as regards paragraph (c) he said 'In 1883 the general ratio of the average was fixed over the whole of the military forces in India at 1 British to every 2.5 Indian soldiers. Since those days the whole organisation of the Army has been changed and the Army today is divided into:—

(1) The Field Army which we look to cross the Frontier in case of necessity and to assume the defensive (sic) on our North West Frontier.

(2) It is composed of the Covering Troops which we maintain on the Frontier to keep in order the turbulent tribes which unfortunately live there and

- (3) Of Troops for internal security i.e., for the maintenance of peace and good order within the boundaries of India.'

The Commander-in-Chief observed that, the proportion as between British and Indian troops varied in each of these three categories. For those troops which are required for the Field Army we have the experience of Great War to tell us what is the most efficient proportion (1 British to every 2.7 Indian soldiers). For the Covering Forces which has only to deal with the Frontier Tribes not yet furnished with artillery or machine guns the proportion can be very greatly reduced (1 British to every 6.7 Indians). When we come to internal security where troops are required to deal with religious differences, with riots, it is most necessary to have a higher proportion of British troops, because it is recognised, particularly by the civil authority, that troops other than the Indian are the more reliable and trustworthy to intervene.

The next three resolutions adopted by the Central Legislature dealt with the minor aspect of Indianisation. The first two of these resolutions which were accepted by the Government of India dealt with need for the provision of Commissions in the Indian Territorial Force and demanded that 'no distinction should be made between the Indian Territorial and the Indian Auxiliary Force in respect of the authority which assigns the commissions and that officers of these two forces should take rank *inter se* according to the date of appointment.

The next resolution demanded that no proposals for interchange of officers between British and Indian services should be carried out unless the following conditions are satisfied:—

- (a) The cost to India revenue should not thereby be appreciably increased;
- (b) that such proposal should not be allowed to interfere with a steady expansion in the proportion of the King's Commissions thrown open to the Indians in the Indian Army; and
- (c) that the interchange of British Officers should in no way affect the control of the Government of India over the entire Army in India.

Another resolution demanded that 'having regard to the creation of two additional Commands in India, the Government of India do consider the expediency of reducing the size of the administrative staff at the Army Headquarters'. On this resolution the Commander-in-Chief gave the assurance asked for but mentioned that at that time the work of Army Headquarters organisation in Mesopotamia was still unliquidated. He further stated that the record of the Army Headquarters, India, appeared favourable as compared to wartime increases in staff in other countries and that one of the lessons of the war was that it was economical when 'it came to have a really efficient administrative system and not to have to make improvisations which were, of all things, the most expensive when war comes'.

The resolution demanding the appointment of a Committee to go into the entire question of the Army organisation and expenditure ran 'As soon as external and internal conditions in India permit, the Governor General-in-Council should, with the concurrence of the Secretary of State, appoint a Committee, adequately representative of non-official Indian opinion, for the purpose of examining and reporting upon:—

- (a) The best method of giving effect to the natural rights and aspirations of the people of India to take an honourable part in the defence of their country, and prepare the country for the attainment of full responsible government which has been declared to be the goal of British policy;
- (b) the financial capacity of India to bear the burden of military expenditure;
- (c) Her claim to equality of status and treatment with the self-governing Dominions; and
- (d) the method of recruitment to the Commissioned ranks of the Army.

The last resolution was a minor one asking for the inclusion of Anglo-Indians in the term Indian Subjects.

As a tailpiece to these resolutions was one moved by Mr. N. M. Samarth to the effect that 'the Assembly expressed no opinion on such of the recommendations of the Esher

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Committee as have not been dealt with in the foregoing resolutions.'

On July 4, 1923, Sir P. S. Siwaswami again returned to the charge and moved a resolution which was carried through inspite of the amendment moved by the Army Secretary. The resolution demanded 'promptly giving effect to the 1921 resolutions of the Assembly respectively dealing with the admission of Indians to all Arms of the Forces and to the Royal Military College at Sandhurst, the formation of Territorial Force and to the grant of commissions to the Indians in the Territorial Force'.

The Indianisation of the officer cadre of the Army was assumed with the announcement of the Government of India to reserve ten seats annually at Sandhurst. The Indian candidates for these seats were required to compete amongst themselves in an examination, the standard of which was intended to be approximate to that of the entrance examination for Sandhurst held in the United Kingdom. The Indian candidates were also interviewed personally by selection board, and in the end by the Commander-in-Chief and the Viceroy, who made the final nominations. Vacancies not filled up in India were filled by the Secretary of State for India from amongst the Indian boys educated in the United Kingdom. In order to obviate the financial difficulties their passages to and from England were borne by the Government.

The first batch of cadets had an undesirably large proportions of failures. This was due to natural handicaps in respect to education. In order to overcome this difficulty partially the age limit in the case of Indian boys was raised from 19 to 20. But the most practical measure which was adopted was the establishment of the Prince of Wales Royal Indian Military College at Dehra Dun, a Government institution for the preliminary education of Indians who desired to qualify for a King's Commission in the Army through the Royal Military College, Sandhurst. The Dehra Dun College was formally opened by His Royal Highness the Prince of Wales on 13th March, 1922. A further step towards Indianisation was taken in February 1923 when Lord Rawlinson announced in the Legislative Assembly to completely Indianise eight units of the Indian Army. They were. (1) 7th Light Cavalry. (2) 16th Light Cavalry. (3)

2/1st Madras Pioneers. (4) 4/9th Hyderabad Regiment. (5) 5th Royal Battalion, 5th Marahatta Light Infantry. (6) 1/7th Rajput Regiment (Q.V.O.L.I.) (7) 1/4th Punjab Regiment. (8) 2/1st Punjab Regiment.

On February 19, 1925, Dewan Bahadur Venkatapathi Razu's resolution as amended by Sir Alexander Meddmanus motions, was passed to the effect that a committee, including Indian members of the Legislature be appointed immediately to investigate and report:—

1. What steps should be taken to establish a Military College in India to train Indian Officers for the Commissioned ranks of the Indian Army.

2. Whether, when a Military College is established in India, it should supersede or be supplemented by Sandhurst and Woolwich, so far as the training of the Indian Officers is concerned; and

- (3) To advise at what rate Indianisation of the Army shall be accelerated for the purpose of attracting educated Indians to military career.

The resolution, in addition to the same member's earlier resolution (February 5, 1924) concerning the reorganisation of the Indian Territorial Forces as a second line of defence for the Army in India and with Indo-British racial distinctions battered down supplied another landmark in the history of Indianisation. Lord Reading in his address to the joint session of the Central Legislature on August 20, 1925 indicated that the Indian Sandhurst Committee would investigate not only the most suitable means for training Indians to hold the King's Commission, but also measures needed to attract the best of Indian youth to a military career.

The Skeen Committee recommendations at this period offered a fresh lever to drive home the point of Indianisation, with special reference to the officering of the Indian Army by Indian Officers. The Committee had recommended unanimously that immediate steps be taken to bring about the Indianisation of half the cadre of Officers of Indian Army within a period of fifteen years. Dr. B. S. Moonje's resolution on this subject was, after a heated debate, passed by Assembly in September, 1921. Dr. Moonje had demanded

immediate implementation of all the unanimous recommendations of the Committee particularly with regard to the establishment of an Indian Sandhurst and the recruitment of Indian Officers in those arms of the defence forces paid out of the Indian revenues, from which they were at that time excluded.'

The progress of Indianisation, though slow was steady. There were nine Indians holding Kings's Commission in 1919. Their number rose to ninety-one in 1929.

On September, 5, the year when the Military School at Dehra Dum was completely reorganised, the then Army Secretary announced that the first examination had attracted a large number of candidates testifying thereby that there was no dearth of ambitious young people ready to officer the army. In that year Indian cadets were also commissioned to the Royal Indian Air Force.

INDIAN STATES FORCES

Although, the standard of training of the Imperial Service Troops was high, their establishments differed from those of the regular army, and when serving together in the field, this dissimilarity proved a source of difficulty. So after the war when the whole of Indian military requirements were under review, a Committee of the Princes together with experts from the Central Government of India evolved the scheme which gave to these troops a new shape and form and designated, them as 'The Indian States Forces'. As a result of this scheme units of the Princes were included in the scheme of efficient training and armanent. The scheme did not include the irregular forces still maintained by some rulers on an almost medeival and feudatory basis.

The Indian States Forces numbered nearly 50,000 men, more than double the number that existed during the war. Forty nine states were included in the scheme and their armies varied in strength from the equivalent of the division maintained by Hyderabad, Gwalior and Kashmir down to one platoon. In most cases the troops were well barracked, well clothed and equipped, and fairly paid; there were, however, great variations, but many of the states rapidly fell in line with the prevailing conditions in the Indian Army proper.

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The training of the force was carried out by Military advisers who were specially selected for the duty, the whole being directed by a specially selected General Officer known as the Military Adviser-in-Chief. The officer was not under the control of the Defence Department but worked in close touch with it as the matter of the forces of Indian India fell within the scope of the Political Department.

Officers and men of the Indian States Forces were thenceafter sent to the same schools of instruction as those of the Indian Army. The various units carried out joint manoeuvres with the troops of the Indian Army and assimilated themselves in every way as a part of the defence forces of the coming Federal India. All the rulers took intense pride and interest in the welfare of their men and the efficiency of their armies.

INDIAN NAVY

The history of the growth and development of the Indian Army, though interesting and eventful, would not give a complete picture of the growth and development of the Indian Armed Force unless a thought is given to the other two services the Navy and the Air Force.

The foundation of our present Navy dates back practically from the time the East India Company established its headquarters at Surat with four ships, *Dragon*, *Hoscander*, *James* and *Solomon*. Originally the Company's fleet was called 'The Honourable East India Company's Marine'. But Commodore (later Rear Admiral) J. T. S. Hall, C. I. E., R. I. N., in his lecture before the Royal Central Asian Society on November, 22, 1944 mentioned the various names that were given to this fleet from time to time. According to him :—

'From 1612 to 1686 it (the fleet) was known as the Honourable East India Company's Marine. From then until 1830, it was called the Bombay Marine, from 1830 to 1863, the Indian Navy, thence until 1877, again Bombay Marine; from 1877 to 1892 His Majesty's Indian Marine. In 1892 it was again renamed the Royal Indian Marine.

This Navy had many exploits to its credit and participated in wars both in the East upto China and in the West upto Persian Gulf, African coast and even in Europe. The Indian Navy is also said to have participated in the Napoleonic

Wars and Indian built ships were amongst those which fought at Trafalgar.

The recent history of the Indian Navy can be dated from 1920 onwards. Some efforts were then made to build a Navy for India. Admiral Lord Jellicoe was invited to study the problem. But his report on reorganisation was shelved and no action was taken thereon except that a Flag Officer was appointed to command the Navy. The next turn of the wheel of fortune, however, brought a severe reverse. As a result of the Inchcape Committee in 1923, the service reached its lowest ebb. The three troopships were sold out and the station ships were practically reduced to lighthouse tenders. Failing to obtain what he considered reasonable hearing from the Government, Rear Admiral Mawby made the strongest protest a serving officer could make he resigned his appointment as Director of the Royal Indian Marine and went home.

This strong action was followed by the appointment of a Committee under Lord Rawlinson. The Committee recommended complete reorganisation of the Service as a combatant force. As a result of the recommendations of this committee the foundations of Indian Navy were laid in 1926. On February 6, 1926 the Commander-in-Chief (successor to Lord Rawlinson) announced 'His Majesty's Government, have, subject to the understanding of the necessary legislation on the subject, agreed to the reconstitution of the Royal Indian Marine on a combatant basis to enable India to take the first step in providing her own Naval Defence in future. It was with this object in view that His Excellency the Viceroy (Lord Reading), early last year assembled a Committee under the presidency of my very distinguished predecessor Lord Rawlinson, in conjunction with the Naval Commander-in-Chief, Admiral Richmond and it is as a result of the recommendations made by the Committee that the present decision has been arrived at. Subject to the sanction of His Majesty the King Emperor, the new service will be known as 'Royal Indian Navy' and together with the sloops of His Majesty's Navy will have the great privilege of flying the White Ensign I may mention here that Indians will be eligible to hold Commissioned ranks and it will of course be necessary for us to take necessary steps and we should do so to provide for their education and training.'

Despite the above said declaration it was only in September, 1934 when the Royal Indian Navy was officially constituted and it was not till 1938, when a Committee headed by Lord Chetfield, Admiral of the fleet, made recommendations for the Defence Service of India, that concerted efforts were made for the creations of a Navy for India.

AIR FORCE

The Indian Air Force is of recent creation. It is the youngest of three services.

It was in 1909 that Mr. M. Bleriot, by flying across the English Channel, awakened in England a new interest in aviation and in 1910 the Commander-in-Chief in India received the first official application from an officer of the Indian Army for employment as an airman. The request was not granted and for four years more, flying in India remained in the hands of private enterprise.

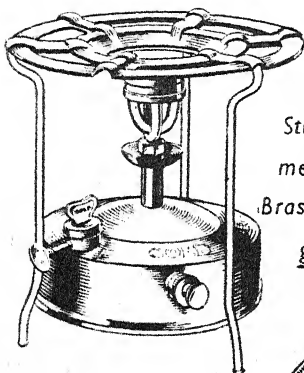
In 1912 an officer of the Royal Artillery attended army manoeuvres at Rawalpindi with an early type of Farman biplane and a French pilot. Both the pilot and the machine had been imported into India at the officer's private expenses. The few flights that were made they were the first flights made in India .. ended in a disaster to the aeroplane but they bore fruit in directing serious attention to the military potentialities of the new arm. Within a short time it was decided to form an Indian Flying School. Accommodation was found in the deserted cantonment of Sitapur. The staff was provided by the officers of the Indian Army, who having learnt to fly at their own expense while on leave in England had afterwards completed a course with the Royal Flying Corps at Farnborough. Mechanics and aeronautical material were provided from England. The organisation of the school had progressed enough by 1914 to start the first course of instruction.

The outbreak of the Great War, however, intervened. It was not possible at that time to foresee either the long duration of the war, or the enormous demand for trained aviators that it would entail. A correct anticipation would probably have led to the continuance of the school but on the outbreak of hostilities the immediate necessity of employing the services of every available pilot obscured

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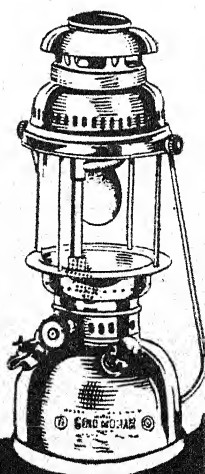


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every other consideration and the flying school was broken up. Its staff and aircraft were devoted to active service in the field.

The Indian flying unit, which may be regarded as the embryo of the Royal Air Force in India, first saw active service with the Indian Expeditionary Force despatched to Egypt (1914). Here it performed valuable service in reconnaissances connected with the Turkish attack on Suez Canal. After the failure of the attack the unit was relieved by a squadron of the Royal Flying Corps and its personnel was released for service in Mesopotamia.

The nucleus of the air force required for Mesopotamia Expeditionary Force, consisted of an air contingent provided by the Commonwealth of Australia. This was supplemented partly by trained men from India and partly by the Indian Army airmen released from Egypt.

By the middle of 1915 insistent calls for more air squadrons came from every fighting front. It became evident that in meeting these demands, the best results would be achieved if the air organisation for the war were centralised in and controlled by one authority. The winter of 1915, therefore saw the demise of the India Flying Corps as a separate body.

In December 1915, the first detachment of the Royal Flying Corps arrived in India. It consisted of No. 31 Squadron and the nucleus of an Aircraft Part a unit designed for the storage and supply of technical equipment for the squadron. The whole formation was first located at Nowshera and subsequently at Risalpur.

The period from 1916-18 was one of intensive training. No large air operations were undertaken but from time to time flights were despatched for operation on the North West Frontier. The experience thus gained led to the decision to add to the air force in India and in 1918 second squadron was formed. The total strength of the Air Force in India had then risen to eighty officers and six hundred men. In 1919 four more squadrons were added and in 1920 two single seater squadrons were the progress of Indianisation, though slow, continued to be steady. There were nine Indian Commissioned officers in 1919. The number rose to 91 in 1929.

On September, 5, 1932, the Army Secretary announced that the first examination 'attracted large number of candidates'. In that year the Indian cadets were commissioned to the Indian Air Force also. The Defence sub-committee of the first Round Table Conference was emphatic on Indianisation and the Dehra Dun Academy.

The Air Force was then a body of considerable strength.

Almost immediately after, however, the new organisation had to share the effects of post war financial stringency. Both the new scout squadrons were dispensed in 1921, one being transferred to Iraq and the other disbanded. In other respects also the air service was affected by the financial difficulties of Government and in 1922 the state of the Air Force in India formed the subject of special inquiry, conducted by a distinguished officer of the Royal Air Force who visited India on his way to assume command of His Majesty's forces in Iraq. As a result of this though the existing number of squadrons was not increased but by adopting certain economics of organisation sufficient financial margin was obtained to render possible the attainment of a much higher standard of efficiency.

Lord Inchcape's Committee of 1922-23 did not recommend any reduction in the Royal Air Force in India thus constituted.

ROUND TABLE CONFERENCE

Whatever the reforms and reorganisations put into practice the true constitutional position of the Army in India at the time of the Round Table Conference in November, 1931 was that the Army in India was maintained by the Crown in exercise of its prerogatives. Excepting that there were provisions in the existing constitution for the appointment of the Commander-in-Chief, or rather with regard to his position in the Executive Council and also that the Civil and Military Government of India rested in the Governor General subject to the control of the Secretary of State, there was no special provision for the Army in India in the Government of India Act. Although the Indian Legislature found money for the upkeep of the Army it could not discuss matters relating to the Army it certainly could not vote on them. According to the

advanced public opinion clamouring for greater and greater share in the Government it was merely an Army of Occupation partly Indian and partly British in personnel.

Amongst those on the Federal Structure Committee of the conference who insisted that immediate further steps be taken to transfer greater control of the Army to the Indian hands were Sir Tej Bahadur Sapru, Pt. Madanmohan Malaviya and Mahatma Gandhi.

Mahatma Gandhi, in one of the most spirited speeches before the Committee said 'I think that a nation that has no control over her own defence forces and over her external policy, is hardly a responsible nation. Defence, its Army, is to a nation the very essence of its existence and if a nation's defence is controlled by an outside agency, no matter how friendly it is, then that nation is certainly not responsibly governed. That being my fundamental position, I would say that if you British Ministers and British people really wish well by India, if you will transfer power now to us, then regard this as a vital condition that the Army should pass under our control in its entirety'.

The two view points which, however, formed the subject matter of active discussion by the Committee were put forward by Sir Tej Bahadur Sapru and Pt. Madanmohan Malaviya.

Sir Tej Bahadur Sapru suggested that during the transition period there may, indeed there must be an Indian member who shall acquire inside knowledge and experience of the Army administration, who shall cultivate a direct knowledge of the problems connected with the organisation of the Army, but who under the statute continue to be responsible to the Crown that is to say responsible to the Governor General. So far as the technical side of the Army was concerned, so far as the questions relating to discipline, drill and mobilisation were concerned, they will remain within the jurisdiction of the Commander-in-Chief who shall be appointed by the Crown and who, for many years to come, would be a British officer of high rank. Besides, special powers be given to the Governor General during emergencies'.

While suggesting that the Army member of the future may take some time to evolve a policy of his own in regard to

the size of the Army, discuss the matter with the Governor General, cultivate the opinion of the Legislature in his favour, cultivate the opinion in the country to the same effect, then raise the question with His Majesty's Government, stated there must be a continuous policy, subject to over-riding considerations of general safety, of general reduction of British troops.

On the vital question of the Indianisation of the Indian Army Sir Tej Bahadur Sapru said 'We think that the rate of progress does not satisfy the Indian opinion it does not meet the requirements of the country and it does not reflect the spirit of the recommendations of the various committees on the subject so far. I do say that the status must lay an obligation on the Governor General which will be discharged through the Army Member that he shall maintain certain military institutions for the training for higher ranks and to that effect the recommendations of the Thomas Committee to establish College to train Indians for Commissions in all arms of the Indian Defence Services must be established. This college should also train prospective officers of the Indian State Forces. Indian cadets should, however, continue to be eligible for admission, as at present, to Sandhurst, Woolwich and Carnwell.

Pt. Madanmohan Malaviya characterised the whole scheme put up by Sir Tej Bahadur Sapru as 'inconsistent and incompatible with the idea of responsible Government'. He, therefore, suggested that the Army Member must be responsible to the Indian Legislature like all other Ministers and vested with all powers as are vested in Ministers in other free and civilised governments. It was then alone that India could have a 'National Army' and could take effective part in her defence. While leaving the matters of technical matters within the special powers of the Commander-in-Chief the Army Member must have complete control over all non-technical matters. He should also have the power to require the Commander-in-Chief or the Commanding officer to move the troops from one part of the country to another wherever there may be necessity of it. To meet an emergency there should be provided in the constitution that on a proved danger from outside or a proved breakdown of the machinery of the Government the Governor

General may, if he thinks necessary for preventing external aggression or internal commotion, suspend the constitution to the extent necessary, and himself take charge of the Army.

Speaking on the question of British troops Pt. Malaviya said 'The Army in India consists of two parts. One is the Indian Army proper. I think it will be generally agreed that the Indian member should have charge of this army which consists of Indian soldiers and which is officered mostly by British officers and partly by Indian officers. The question of continuance of British troops in India requires to be examined from two points of views the need of them in the country, owing to the apprehension of danger from outside or inside and the question of economy. Since India has to take the responsibility of her own defence and maintain the Armed Forces with the money available in the country for this purpose, the British troops will have to be removed. This may be immediate removal of a portion of the said troops and the other is the progressive removal of the rest in due course of time.

Speaking on the vital question of Indianisation Pt. Malaviya said 'It is a sad story that Indians have not been admitted to the military institutions in this country for the last several decades. It is only recently that some of them have obtained King's Commissions. For the past forty five years the Congress has been urging that the Indians should be admitted to the higher ranks by being given training that is needed for them. The Indian member, as and when he is appointed, must have this very important duty to perform, that in accordance with the wishes of Legislature he will be responsible for the establishment of military institutions for training in all arms. That is very vital need of the situation. Also, unlike as at present, the recruitment should be thrown open to all classes'.

The gist of Pt. Malaviya's observations was : The control of the Indian Army must pass to Indian hands. The Indian members appointed for the purpose must be responsible to the Indian legislature. While leaving the technical matters in the hands of the Commander-in-Chief and the emergency powers in the hands of the Governor General the Indian member must have complete control of the Indian Army except the British troops who must be removed. He must also organise, establish and

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maintain institutions for military instructions in all arms in the country. Finally the recruitment must be thrown open to all classes. 'An Indian member, responsible to the Legislature, obtaining the supplies from the Legislature and carrying out the resolutions of the Legislature in regard to the instruction of Indians in all arms, will be just the person needed.'

Lord Reading speaking on the subject said I do not understand how it is possible, in view of what we have put forward, that a proposal such as that which Pandit Malaviya has made could be acceptable. It is very negation of what we have indicated from the start. The proposal is to have an Indian Minister responsible to the Legislature throughout. He suggests that the control of the Army and of everything connected with the Army should lie with an Indian Minister responsible to the Legislature, that the only right that the Governor General would have of intervention would be in an emergency, when he should step in and, as I follow the proposal, suspend the constitution. All that I desire to say with regard to it is that to my mind it is of the essence that if responsibility at the Central is to be conferred upon the Indian Legislature, which I desire and advocate, there must be reservation with regard to the Army that that shall remain for the Governor General and that the Governor General shall have the power to appoint a Minister and that he should have the benefit of that Minister's advice and should select him. I wish to state very plainly to this Committee that any proposal for a responsible Government would be unacceptable to me if it did not make the exception that the Army must be in the hands of the Governor General and that any Minister must be responsible to him'.

GARRAN TRIBUNAL

In 1933 the Garra Tribunal accepted the view of the War Office that India should assume responsibility for the 'minor danger' involved in the maintenance of internal security and protection against local aggression and that Great Britain should assume responsibility for the 'major danger' of an attack by a great power upon India and through India on the Empire. The Tribunal recommended that Great Britain should make a contribution towards the cost of Indian defence because the advantages derived by Great Britain from the Army in India were distinctly

'ponderable'. The nett recognition of these ponderable advantages was an annual contribution by Great Britain of £1,500,000 in 1933. In 1943 it was costing £1,500,000 to keep the war going for three hours.

It had already been recognised in 1928 that India was behind in rearmament and re-equipment and whatever was saved every year on the Defence Budget was carried forward to what was known as the Defence Reserve Fund. Then came that ambiguous financial crisis which brought in the National Government of 1931, after which such drastic cuts were made in the Defence budget that it was impossible to save anything indeed barely possible to avoid falling still farther behind.

AUCHINLECK COMMITTEE

In 1936 the international situation had become so menacing that a review of the defence policy was imperative; but by then political and financial situation had hardened in India itself and the Defence Budget was reduced although India had now undertaken the organisation of her naval defence with the help of an annual grant by British Government. After long discussion it was decided in September, 1938 to increase the annual grant from the British Exchequer towards Indian defence to £2,000,000 and to make a special grant of £5,000,000 for the re-equipment of certain British and Indian units. Meanwhile the Commander-in-Chief appointed a Committee under the chairmanship of the then Major General C. J. Auchinleck to consider the modernisation, composition and re-equipment of the Army in India. The Committee found that rapid modernisation was immediately necessary if the Army in India was to perform its allotted task in war in co-operation with the Empire forces. The Committee said :—

The Army in India is showing tendency to fall behind the forces of such minor States as Egypt, Iraq and Afghanistan. Judged by modern standards the Army in India is relatively immobile and underarmed and unfit to take the field against land or air forces equipped with up-to-date weapons. Already drafts from the British Army from the U.K., on arrival in India have to be retrained in the use of obsolete weapons and outworn tactical methods, while British units on leaving India have to be taught afresh before they can take their place in British field formations. All high explosive has, at present, to be imported and there is no

production of motor vehicles, wireless sets, power tools or machinery.

CHATFIELD COMMITTEE

The conclusions reached by the Auchinleck Committee formed the basis for the recommendations made by the Expert Committee on the Defence of India under the chairmanship of Admiral of the Fleet Lord Chatfield which were published on September 5th 1939 and in which it was announced that British Government was prepared to provide a total nett capital cost of £34,330,000, three quarters of it as a free gift, for the modernisation of India's defence under a five year plan. So rapidly was this five year plan put into motion for fighting a war which had already begun that a first instalment of £200,000 for cavalry reorganisation had already been paid by the War Office when the Committee's findings were published.

The plans for the modernisation under the said five years' plan were based on the defence of the North West Frontier and the equipment of one division for service overseas one division.

ON THE EVE OF WAR

In April 1939 the Indian Army Ordnance Corps took over workshop services of the Royal Indian Army Service Corps and assumed responsibility for the maintenance and repair of all mechanised vehicles. This transfer involved trebling the I.A.O.C., and entering upon an extensive building programme of repair workshops and training establishments which heavily handicapped the corps at the outbreak of war.

The Transportation services did not exist before 1940. The movement organisation was in a rudimentary stage represented by a second grade staff officer in the Directorate of Movements and Quartering. There were embryo embarkation staffs at Bombay, Madras, Calcutta and Karachi but there was no control staff for internal movement by railway.

The munition factories of India, some of which went back to the days of East India Company, were administered by the Master General of Ordnance. They were few in number and although most of the basic metallic ores for armament existed in India or adjacent territories, there was no means of converting them to use and all vital raw material had to be imported. There was no factory for motor vehicles; only motor bodies could be produced and these on a very small scale. The aircraft industry did not exist and anti-

aircraft defence was not even contemplated even* as a contingent necessity. The oil needs of India could be partially met by the fields at Attock and Digboi but petrol was imported from Abadan. There were no tankage for strategic reserves of petrol and aviation spirit and there were not enough tank wagons to ensure the rapid transport of such supplies from the ports. The shortage of supplies in every direction had been appreciated by 1938. No attempt was made to assess the needs of essential civil industries. The British Government was consulted in 1938 about priorities of supply to and from India and other parts of the Empire but no practical scheme was evolved when the war broke out.

The principle of Indianisation of the officer cadre, though accepted in 1918 had been extremely slow. At this time the scheme for an all Indian division and the elimination of V.C.O.s earlier announced, whose contribution was appreciated in words 'the Risaldars and Jemadars of the Indian cavalry, the Subedars and Jemadars of the Indian infantry stand beside the warrant officers of the Royal Navy and of the British Army paragons all of arms and the man. Without them the bright pages of its history would be less bright and the sombre pages sombre still', was dropped.

The expansion of the Royal Indian Navy was planned in anticipation and completed in June 1937 but the subvention was not paid until April 1938. Late in 1939 regulations for the Royal Indian Navy Reserve, the Royal Indian Fleet Reserve & the Royal Indian Naval Volunteer Reserve were approved but at the outbreak of war there were no R.I.N.V.R. officers, no R.I.F.R. ratings and recruitment for the R.I.N.V.R. had just begun. There were two fairly modern sloops. H.I.M.S. Indus and H.M.I.S. Hindustan, four old sloops H.M.I.S. Cornwallis, Investigator, Lawrence and Clive and one fast petrol boat H.M.I.S. Pathan. For the reorganisation of the Navy the plans drawn up by the Flag Officer Commanding were accepted in general and the construction of four escort vessels and four trawlers were recommended together with the rearming of Indus and Hindustan.

There was divergence of opinion amongst the members of the Committee about the Air Force necessary for adequate defence and in the end the Committee recommended the provision of four bomber squadrons, three army-co-operation squadrons and one bomber transport squadron, two of the bomber squadrons to have primary role of coastal defence.

Two additional bomber squadrons were recommended as India's share of joint responsibility for external defence.

The only defended port at that time was Bombay. This was to be re-equipped with modern defences and anti-aircraft guns. The 6 inch guns then in Bombay were to be installed for the defence of Calcutta. Karachi was in process of being equipped. Cochin and Madras were to be given when these became available. Anti-aircraft guns were to be supplied with the same proviso. No defence measures were considered necessary for Vizagapatam.

The facts brought out by the Chatfield Committee made it clear that not only India was unprepared for a major war when war came but that there did not exist any glimmering notion of what India's part would be when war did come. The bright spot in a prospect of almost unmitigated gloom was the existence of a highly trained army many units of which had practical experience of warfare on the North West Frontier, commanded by probably the best regimental officers of the world. Like the British Army in 1914 it was a small and extremely efficient army of professional volunteers; but it was not equipped for modern war and therefore it could not match its efficiency with its effectiveness.

Although the British Government accepted the Chatfield Report, it was not received in India until the outbreak of war. Preparatory steps to modernise the Army in accord with the recommendations were taken early in 1939. Orders for necessary vehicles and equipment were given and plans for the redistribution of the Army were prepared but without the modern weapons and equipment little could be done to train troops in the new way of warfare. The Army consisted almost entirely of horsed cavalry, unmechanised infantry and horsed artillery. There were no anti-tank units, and in the whole of India there were only eight anti-aircraft guns. There were some motor transport companies in the Royal Indian Army Service Corps, but most of the transport still depended on animals mules, camels and horses. The division of External Defence troops had not been formed and in the event the troops sent overseas before the outbreak of war were mostly those which had not been allocated for external defence. So far as the future was concerned the Indian Army was at an awkward stage of transition. The Indianisation as regards officers affected comparatively few

units. The Army was still dependent on British personnel. There was no Indian artillery except the volunteer batteries and one experimental Indian field regiment. There were no Indian engineer units except the sappers and miners. A proportion of Indians were included in brigade signal sections, but signals as a whole was entirely British. Supply and transport, medical and ordnance services were all dependent on British warrant officers and non-commissioned officers and those were already too few for the needs of the pre war Army. No approved plan for a general expansion of the forces existed and even when the war came there was no idea of how great that expansion would be. The active minds of the Indian Army were the prey of frustration; the less active took refuge in lethargic optimism.

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THE GIGANTIC WAR EFFORT

ARMY

With the outbreak of war began the expansion of the Army proper. The pace of this modernisation was determined not by the available manpower, which was practically unlimited and anxious to serve in tens of thousands, but by the equipment available and the rate at which output could be expanded. Nevertheless it was found possible to enrol 53,000 additional men in the first eight months of war.

In May 1940, it was decided to begin on a more ambitious programme. Orders were issued for the enrolment of a first 100,000 more men. The rate at which this new force could be raised was once again conditioned, first by the available instructors and trained personnel which could be taken from the old formations to act as its backbone, secondly by equipment. It was estimated for example that no less than 20,000 additional motor vehicles would be required, of as many as 56 different types. To assist in releasing the required trained personnel, the Indian Territorial Force which had been increased in strength from sixteen and a half battalions to twenty four and a half battalions, while the strength of the battalion had been increased by 25 percent, took over many internal security and coastal defence duties till then performed by regular troops, while units of Indian State Forces were posted on suitable roles. A force of several thousand men was further provided by the independent kingdom of Nepal, and employed both for active and reserve duties.

The increasing tempo of recruitment could be judged from the fact that by the end of August, 1940, 37,000 more men had been enrolled, while by November 1940, the initial enlistment of 100,000 was substantially completed. By the

end of 1940 it had comfortably exceeded. The rate of recruitment had approached 20,000 men per month.

In 1941, a new programme of expansion designed to bring the total strength of the Army in India, including the forces serving overseas to the half a million mark was initiated. This involved an effort by the ordnance and supply services unparalleled in the history of the country. The measure of success achieved in this respect could be judged by the fact that on March 23, 1941 it was announced that the strength of the forces in India alone was well over the half a million set as the immediate goal, and this excluding the substantial and growing expeditionary forces sent overseas. By the end of the year 1941 it was forecast that it would not be out of the question to reach the full million mark. Recruitment had in the meantime increased to 50,000 men per month.

This constant expansion involved far reaching modifications in the composition of the army. Recruitment was extended to many classes and districts till then either not represented nor not so well represented. Many such classes were recruited to existing units and for specialist or labour duties. The profoundest modification of the army's class composition, was effected in June 1941 when a decision affecting the whole future of Indian Territorial Force was taken.

TERRITORIAL FORCENEW ROLE

The Territorial Force, essentially a peace time organisation, enabled government to maintain units which, on the outbreak of war, could be embodied and trained to the degree of fitness required in war. Since these units were only paid during periods of embodiment for training, this meant considerable financial saving in peace time. Moreover the unit's liability for service was strictly limited to India unless an ordinance were issued directing them to proceed outside India; in the absence of general compulsory service in India the application of compulsion to the I.T.F., alone was not considered justifiable in spite of ample evidence of their keen anxiety to become regulars. However, during the nearly two years of war they had already rendered valuable service in connection with the internal security and coast defence and in view of the standard of training many of them had reached it was felt that their conditions of service should not prevent

them from serving in regions where they would be even more useful and where they themselves wanted to serve. It was accordingly decided that the Territorial Force, as a force be disembodied and remain only in skeleton for the duration of the war. Instead new regular units be raised to which personnel of the I.T.F. be asked to volunteer. The first step to this effect alone contemplated the creation of five new regiments..... the Assam, Bihar, Bengal, Mahar and Mazbhi Sikh regiments and the reconstitution of Madras Regiment. in addition to the absorption of such territorials in these regiments as volunteered there was direct recruitment in the areas concerned to bring the new units upto war strength. The response was expected to be excellent and that expectation was not disappointed. By the end of August 1941, the men of the I.T.F., in all but an insignificant number of cases, had volunteered in percentages justifying the creation of entire new units with the effect that in September 24, 1941 new battalions were added to the Indian Army.

OFFICERS

With steady army expansion went steady progress in the Indianisation of the officer ranks. The old plan of totally 'Indianised units' the number of which in the prewar year had increased from eight to twenty one was scrapped soon after the outbreak of war and instead all units were thrown open to Indian Commissioned Officers. The process was accelerated by the calling up of personnel of the Indian wing of the All India Reserve of Officers, by shortening the course of training at Indian Military Academy, Dehra Dun from two and half years to eighteen months and the abolition of fees, and by opening of a training school for Indian Officers at Mhow with potential output of 1,200 officers per year.

The output of Indian officers was considered short of what had been expected but by June 1941 there was evidence of a substantial improvement in numbers and quality of candidates for commissions. Encouraged by this a further expansion of Indian Officers recruitment was announced in July, 1941. The Indian Military Academy was expanded from a capacity of 200 to 600 while the Officers Training School at Mhow and Bangalore were expanded to hold further 200 cadets each. At the same time the entrance examination for the Indian Military Academy was abolished and all candidates for emergency commissions were called upon to appear before the

same Selection Boards. There was further modification in the courses of training. Suitable candidates aged between 18 and 18½ were to go to the Indian Military Academy for one year's training, as opposed to previous eighteen months, candidates over eighteen and a half, if sufficiently mature from an educational point of view were selected for short seven months' course of training either at the Indian Military Academy or at the Officers' Training School at Mhow or Bangalore. The implementation of this raised the output of Indian officers by one hundred percent.

VICEROY'S COMMISSIONED OFFICERS

Viceroy's Commissioned Officers for the command of platoons and other duties corresponding to those of British Warrant Officers were no less urgently required and in large numbers. Promotion from non-commissioned ranks was rapid and V. C. O.'s was also recruited directly after a short period of training, especially for such technical services as the Royal Indian Army Service Corps. Promotion to non-commissioned ranks was also exceedingly rapid for suitable recruits and for experienced men of the pre-war army. An important factor in the provision of Officers, V. C. O.'s and N. C. O.'s was the expansion of the King George Royal Military Schools for the sons, grandsons and nephews of Indian Army men. These schools trained boys between 15 and 17. The outstanding boys were sent to the Kitchener's College and later to the Indian Military Academy while the remaining went to the nominating units where they had opportunities of being selected to go to an officer's training schools for rapid promotion to V. C. O. or non-commissioned rank. Orders were issued in 1941 that V. C. O.'s of outstanding merit serving overseas, who were considered worthy of Indian Commissioned rank but could not be spared from their posts to attend a training course in India be commissioned direct by special sanction of the Commander-in-Chief, provided that their commanding officers certified that they were fitted to command a company and perform all duties of an officer. Substantial improvement in pay and allowances were also made. V. C. O.'s and men received increases in expatriation, 'Batta' and messing allowance while in 1941 followers gained substantial increases in pay, specially if sent overseas.

BURDENS HEAVIER STILL

Spreading abruptly beyond the European and North African theatres in 1942 the war changed into a world conflict.

India, having effected remarkable feats of militarisation and modernisation, was suddenly confronted not only with the problem of safeguarding her external bastions in the West but also with the grim task of holding back the Japanese menace from her very threshold in the East. At this time India had an increasingly well equipped army of slightly fewer than a million men. Her overseas forces, exceeded two hundred thousand men who had distinguished themselves in many fields, notably in the Western Desert, Eritrea, Syria and Abyssinia. Indian casualties had so far totalled only seven thousand. The capture of nearly four thousand Indian troops at Hong Kong was followed by the downfall of Malaya, the culminating loss of Singapore, in February involved the capture of 32,000 Indian troops following 11,000 casualties earlier in the campaign. To hold the next Japanese drive west and north into Burma, a total of 36,000 Indian troops were sent to that theatre.

With the loss of Burma the vital Burma routes along which essential war supplies formerly flowed to China, India's war effort was redoubled. Still further expansion was effected. Enlistment soared, reaching in July 1942, the record figure for one month of nearly 75,000. At the same time men and fighting machines from Britain, Australia and the U.S.A., poured in to India's aid. The army in India quickly reached a total approaching 1,200,000 and more than 250,000 Indian troops serving overseas.

Two new arms were added to the Indian Defence Forces Paratroops and the Indian Observer Corps. Indian and Gurkha troops took keenly to paratroop work and rapidly attained a degree of skill equal to the best in the Allied Armies. The Indian Observer Corps was specially trained in the intricate task of aeroplane recognition and it formed a vital link in India's air defences.

One major innovation calling special mention was the decision taken in late 1941 to amalgamate the recruiting organisation of the three fighting services under the control of one Directorate in the Adjutant General's Branch at General Headquarters. This measure took effect from 1st January 1942. Its object was to co-ordinate the recruiting effort, prevent competitive recruitment and economise in overheads. It proved a sound decision and a greater measure of success was achieved than would ever have been possible under the old system.

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THE SUPPLY SERVICES

The Indian supply services continued to improve upon the output of previous years. Indian armoured troops had begun to use Indian made armoured fighting vehicles in increasing numbers. Guns, shells and grenades were turned out by Indian factories and arsenals. Figures released in 1942 showed following increases over the pre-war figures :-

Rifles.	8 times pre war output.
Machine Guns. ..	6 times pre war output.
Bayonets.	10 times pre war output.
S. A. Ammunition.	4 times pre war output.
Gun Ammunition.	24 times pre war output.
Guns Carriages.	9 times pre war output.
Respirators.	3 times pre war output.

During the same period the expansion of following items was announced :—

Expansion production of alloy steel for guns and small arms.

Expansion for the production of firings for the guns and gun carriages.

Expansion in the manufacture of bayonets.

A new factory for the manufacture of light machine guns.

Expansion in the manufacture of tripods for light machine guns.

Expansion in the manufacture of loose barrels for A. A. guns.

Expansion in the manufacture of field howitzers and anti-tank guns.

Expansion in the manufacture of shells and mortar bombs.

A new factory for the manufacture of fuses.

A new factory for the manufacture of gun cartridge cases.

A new factory for expanding the manufacture of small arms ammunition.

Expansion in the production of cordite.

New plant for expanding production of toluence and motor benzol.

Expansion in the production of high explosives.

A new filling factory.

A new factory for the manufacture of optical and fire control instruments.

In addition to the above, a project was established for the repair and maintenance of all types of aircrafts. The cost of these projects was in all nearly 16 crores of rupees.

TWO NEW ARMS

India's war effort doubled and redoubled itself during the twelve months of 1943. Further expansion took place in all fighting services and the strength of the Army in India rose to the neighbourhood of two millions an impressive increase of eight Lakhs.

Two new arms were added to the Indian Defence Forces the Indian Army Medical Corps and the Corps of Indian Electrical and Mechanical Engineers. The first was formed by the amalgamation of all branches of the Indian Military Medical Services, the I.M.S., I.M.D., and I.H.C., into one homogeneous organisation. Members of the I.M.D., were considered for emergency commissions into this corps and a parallel development of great significance was the granting of similar emergency commissions to licenciate medical practitioners recruited direct from the civil life.

The I.E.M.E., was formed to take over the engineering functions and technical personnel hitherto controlled by the Indian Army Ordnance Corps. To young Indian Engineering students on the threshold of their careers the new corps which came into being on the 1st of May 1943 offered unique opportunities.

India's supply services expanded further and met large commitments at home and overseas. Her contribution to the victories in North Africa were specially commended. Apart from the men and the machines of the Allied forces, India was almost wholly responsible for the supply of bulk of stores to this theatre from railway wagons to landing craft and electric torches. Many hundreds of steel huts and sheds for housing troops in training and similar structures for military garrages, hospitals and aeroplane hangers were fabricated in India and from Indian steel. Medical stores, tent equipment, munitions etc., were sent out in gigantic quantities.

JUNGLE TRAINING

The need for special training based on the lessons learned in the Malaya and Burma campaigns led to the introduction into the Indian Army of new training methods. Jungle training areas were taken up in different parts of India where formations were given intensive training under conditions exactly similar to those which they would find on the Burma

border and Jungle warfare schools were established for training of unit cadre instructors. Certain princes gave generously large jungle tracts for the purpose. Indian infantry and Gurkha reinforcements destined for the Eastern theatre were put under intensive training in the jungle with certain training formations after they had finished their initial recruit training and before they were available for drafting. Jungle fighting and the conditions of isolation that it imposed made perhaps greater demands than any other form of warfare on the initiative, endurance and skill of the junior leader. The authorities took pains to improve the training of candidates for commissions passing through the Indian Military Academy and the wartime officers training schools. The whole system was revised and brought into line with the latest methods of instructions evolved in Britain.

While modernisation of equipment and transport had speedily gone ahead no pains were spared to ensure that Armed Forces could meet the enemy with every aid which military science could devise. The underdeveloped nature of the country and lack of communication on the eastern border necessitated the re-introduction of old alternative means of transport, ponies and mules . . which had almost disappeared.

An intensive programme was put into effect at the I.A.C. Training Schools to meet great and growing demand for specialised tank men of the right type. The great majority of the tank and armoured cars crews became Indians with V.C. O.s as tank commanders. A number of troops leaders had also become Indians. After a period of training in all forms of arms, qualifying as M. T. driver passing a test in Morse the recruit next had specialist training of the most advanced and thorough type with the latest in tanks and armoured cars at two centres, one in the U.P., and the other in the Punjab.

The successful development of the Boys' Squadron was another interesting feature of the school at Lucknow. Taken in at the age of 14 boys were put to a course of progressive training for eighteen months. Preparing boys both mentally and physically was the object of this squadron. In the process of becoming a soldier and working a tank or armoured car the men learnt a trade which could be useful after the war in such occupations as garrage mechanic, motor transport organisation and on the wireless side, a variety of trades where electricity was used.

During the year 1943 far reaching plans for further industrial development with a view to expanding India's armament output and to increase her production of war stores were put into operation. Schemes for modernising and enlarging ordnance factories turning out explosives small arms and guns were completed and material of this type was produced on a vastly increased scale. In the more general aspect of Indian industrial progress were developments which, though primarily designed for war production, were to have an important influence on the country's post-war advance. These included the introduction of highly technical processes for the manufacture of steel and ferros alloys and the development of plant and equipment for producing high grade materials to meet specialised demands such as R.A.F., and surgical requirements. Important subsidiary industries were established to augument the main plans and large projects to maintain and service the war production factories, including many civil engineering works and domestic installations were completed. Steady advances in the supply of Indian produced machine tools, structural steel, heavy mechanical appliances, electrical equipment, optical stores, paints chemicals were made and other industries essential to war production, such as motor vehicle assembly and ship building and repairing were developed to an extent which guaranteed for them a leading place in India's post-war development.

India's contribution to the allied cause during 1944 reflected the greatest material effort in the nation's history. Throughout the year the Indian fighting men were constantly in action against the enemy at sea, on the land and in the air and at home Indian industrial energy reached new heights of production and efficiency. In the begining of the year Eastern Command was divided into Eastern Command in India and the 14th Army of S.E.A.C., India Command was relieved of the responsibility of the conduct of operations on the eastern frontier and she consolidated her effort as a training base for offensive action against the Japanese forces operating under the South East Asia Command.

India's two million volunteer force continued to expand though the number of men then required and coming forward was much reduced. Technical recruitment dropped by approximately 43 percent as compared to the previous year. Measures taken to improve recruitment included propaganda intensive advertisement, closest liaison with educational insti-

tution and provincial educational authorities, improvement, where necessary and possible, in the terms and conditions of service of technicians and enrolled training clerks under the Labour Department Technical Training Scheme, introduction of special class of combatant clerks with liability for services not only in India but outside field service area and lowering the minimum age limit of enrolment for clerks and certain matriculation zone trainees to enable boys to join immediately after leaving schools.

THE WOMEN'S AUXILIARY CORPS

When Japan came into the war at the end of 1941 and overran the Far East it was evident that an immense new war effort in which every possible pair of hands will have to be used was urgently needed to save the country from invasion. Accordingly the Women's Auxiliary Corps (India) was launched from the Adjutant General's Branch on April 9, 1942 with the primary object of releasing men for the services.

There was no time for preliminary training. The smartness that any corps could gain from recruit training centres had at that time to go by the board. Girls were sent straight from civilian jobs to army appointments for which they had the necessary qualification. Each one of them took over from some man. Some of them became officers instantly. It was considered that women who were doing work equivalent to that of a service officer should have her rank. By the end of 1944 there were over 10,000 women in W.A.C. (I) many of them filling high staff appointments. All the three services had their own W.A.C. (I) wing.

In 1944, however, recruit training centres were opened in each of the five commands to serve as a bridge between civil and military life. Correct dress, drill, saluting, a knowledge of service terms, together with lectures on hygiene, current affairs, colloquial English and other useful subjects were put as part of the course.

Recruitment to the W.A.C. (I) was voluntary and was open to any British subject or subject of an Indian State. Members of the service were posted in all climates from the North West Frontier to the most southerly areas and from Chittagong to Karachi. Their duties varied and frequently required a high degree of expert knowledge. On the Army side there were draughtswomen, laboratory assistants, stora-

women, telephonists, modellers and photographers, cipher operators and stenographers. Many women were filling specialist appointments at the G.H.Q., and elsewhere. From Karachi to Cochin and East to Chittagong the Naval wing girls, trim and cool in their white summer uniforms, rendered invaluable aid to the R.I.N., Present at all ports they deciphered code messages, worked intricate type machines whose secret mechanism transformed an ordinary message into code and carried out general administrative duties. Busy at various air establishments throughout the country the girls of the Air Wing did highly specialised work. They were plotters and tellers in air operations rooms and photographic interpreters in units interpreting pictures taken on aerial reconnaissance. Some of them had high responsible jobs controlling the movement of planes. There were quite a number doing secretarial work and as personal assistants to high ranking officers. They did not wear the R.A.F., uniforms or badges but they could be distinguished by the blue eagle they so proudly wore on their shoulders.

ORDNANCE FACTORIES

Some ten complete new factories were built and equipped with plant and machinery. The equipment of the factories involved the importation of thousands of machine tools and plant items, together with ancillary electrical equipment, transformers, switchgears etc., to operate the newly constructed factories. Major schemes were carried out for water supply, electric supply, sewage, disposal etc. New road and railways communications were laid down and constructed; to house the personnel necessary to operate the factories vast housing estates were built. Steps were also taken to further improve the quality of machine tools, manufactured in India. Production of armoured vehicles by the utilization of indigenous armour plate became well established and numerous general purpose trucks were adapted for various roles. A statement issued showed the position of armament production in India as under :—

Rifles :- 11 times pre-war output. Bayonets 20 times pre-war output. Small Arms Ammunition More than 4 times pre-war output. Guns and Carriages 20 times pre-war output. Guns and Mortar Ammunition 35 times pre-war output. Grenades, Mines, Bombs, Pyrotechnic Stores Most of these were not made in India before the war. Instruments 50 times pre-war output.

NAVY

As in the case of the ARMY the Chatfield Committee had recommended the expansion and strengthening of Indian Navy. To start with the annual sum of Rs. 15 lakhs paid by India as a contribution to Commonwealth defence was surrendered by the British Government and in return the Royal Indian Navy assumed increased responsibility for the defence of India's coasts and borders in close liaison with the East Indies Squadron. It was also announced that India's navy would be strengthened by four modern sloops of the 'Bittern' class and four 'Mastiff' trawlers and provision for equipping and manning auxiliaries in case of war.

Shortly after the outbreak of war the R. I. N. received permission to establish reserves. The R.I.N.V.R. consisted of serving officers and warrant officers of the Mercantile Marine. The R.I.N.V.R. originally had two branches, executive and accountant; a third engineer branch was added immediately after the outbreak of war. Officers of the R.I.N.V.R. were recruited from the members of general public. They were given six months intensive training at the depot and they continued their instructions at sea. For rating a special war procedure was set up. The ordinary continuous service ratings served for twelve years. The R.I.N. also recruited special 'special service' ratings who served for four years or less if sufficient in the active service and then went into the R.I.N.V.R. for the rest of their ten years engagement. In addition 'hostilities only' ratings were recruited from the personnel of the Merchant Marine. These were principally obtained from the crews of requisitioned merchant vessels.

On the outbreak of war it was clearly necessary to increase the expansion of the Royal Indian Navy to the utmost and in the shortest possible time. Immediate steps were, therefore, taken to turn out fast sea-going motor boats for coastal patrol, and Powerfully armed corvettes and minesweepers for anti-submarine and other duties. In July 1941 was launched the H.M.I.S. Travancore the first vessel for the R.I.N. built in Indian waters. This was followed in October 1941 by the H. M. I. S. 'Baroda' while others were on stocks.

The vessels of this class 'Bassett' trawlers were named some after various Indian States and others after the chief towns in India, such as Agra, Patna, Lahore. These ships were admirably fitted for minesweeping patrol duties. Ships of larger, corvettes of the 'Banger' class, used both for minesweeping and anti-submarine duties, motor minesweepers, 72-foot launches, tugs, life boats and other crafts were also built.

Meanwhile, inspite of her own heavy naval commitments, Great Britain, undertook to supply India with some of the larger crafts required. Some of the crafts supplied had already seen considerable service. Among the vessels so supplied at that stage were named after the rivers of India 'Sutlej, Jumna, Narbada and so on'.

The enormously increased duties imposed on the R.I.N. by the outbreak of war made it necessary to requisition a number of merchant ships. Many members of the crews of these ships volunteered and were accepted for service. They were brought upto strength by other trained personnel and its reserves armed and equipped against mines, underwater, surface and air attacks and put into commission.

New naval bases were developed in the ports of Cochin and Vizagapatam as well as in the other ports of Madras, Karachi, Bombay and Calcutta and from each base latest anti-submarine and minesweeping craft was put into operation.

JAPAN'S ENTRY

Japan's entry into the war imposed on the R.I.N. even heavier responsibilities than those it had till then done. The operations against the Italians in East Africa, operations in which Indian ships did notably good work, were conducted at a considerable distance from India's shores. The campaign of August 1941, following Nazi intrigues in Iran, was comparatively nearer at hand. It was also brief and limited in scope. But the course of events in Malaya and Burma brought the war much nearer to India not only on land but in the air and at sea as well. To assist in the arduous naval duties Indian ships were ordered to far eastern waters, where they rendered valuable services, particularly in the escorting of convoys. In this work H.M.I.S. 'Jumna' and 'Sutlej' distinguished themselves. The climax of Jumna's experiences was reached when

she was in Dutch East Indies waters and when Japanese aircraft attacked Batavia in strength. Officers and men of H.M.I.S. 'Sutlej' also showed their mettle in encounters with enemy aircraft and when a convoy of which she was a part was assailed in the Banka Strait. At the Burma Campaign the duties performed by the ships of the Indian Navy were many and important. As the tide of battle moved up Burma it fell to the ships of the Indian Navy to help in the evacuation of many thousands of refugees who thronged to the coast seeking means of reaching India. When the enemy's progress made it inevitable that localities should be evacuated, Indian naval personnel helped to destroy what could not be taken away. The nature of the work it had to perform made some losses inevitable. H.M.I.S. Indus was sunk at Akyab as a result of a determined attack by formations of enemy air attack and H.M.I.S. 'Sophie Marie' was lost after striking mine in Bay of Bengal, the later stages of Burma campaign were marked by incursions into the Bay of Bengal. There raids added still more to the burden of responsibilities in protecting our own coast and shipping.

In the summer of 1943 Indian ships formed part of the screen of escorting warships that took the mighty armada of several thousand transport and landing crafts from North Africa to the eastern sector of Sicily. They helped to ensure that troops, equipment and supplies were put safely ashore on 'Zero Day'.

MATTER OF PRIDE

The outline of navy's operational working could be mentioned with pride that in the war upto September, 1943 thirty-five officers and men had received awards and twenty had been mentioned in the despatches. The awards included one D.S.O., six D.S.C's and ten I.D.M.s, all earned for gallantry in engagements at sea. The actions concerned took place in widely separated parts of the Indian Ocean areas. Indian and British officers shared almost equally those honours for which they were eligible while Indian ratings monopolised the D.S.M. and I.D.S.M., awards.

The operational duties of the R.I.N., during 1943-44 called for the provision of convoy escorts, anti-submarine patrols, constant minesweeping and collaboration with other services fighting the Japanese on the Burma seaboard. During

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this period an enemy submarine was sunk in the Indian Ocean by three warships of Royal Navy, Royal Indian Navy and Royal Australian Navy. For H.M.I. ships part in the successful operation her commanding officer was mentioned in the despatches. Good work was also done by H.M.I.S., 'Bihar' in rescuing 191 survivors from a sunken merchant ship at night. While bigger ships of Indian navy were engaged in the protection of shipping and coastal waters, the little ships of R.I.N. Coastal Forces carried fight to the enemy by bombarding targets on the west coast of Burma, intercepting Japanese supply ships and covering seaborne landings by Allied troops on the Japanese flank in the Arakan. During this period awards made to officers and men of the Navy included two D.S.C's., 5 D.S.Ms., one M.B.R., and eighteen mentions in the despatches.

TRAINING FACILITIES

Neither the expansion nor the operational contribution that R.I.N. made could have been possible without adequate facilities for training to the rapidly increasing personnel. The initial difficulties in respect were the shortage of qualified instructors and suitable equipment. The difficulties were particularly acute in the case of officers. The method adopted, therefore, was to give newly entered officers a short period afloat, in which they could grow accustomed to the gear used, the signals and the way work was done. They were then to attend short but intensive courses ashore in seamanship, signals, gunnery, navigation, anti-submarine work and anti-gas defence. They were then posted for service afloat in the ordinary way. Those who showed special aptitude in any special subject were, after gaining sea experience, brought back for 'long course' in that subject and made specialist officers. By these means, though in the first months efficiency suffered to some extent as it was necessary to send many officers afloat who had little or no previous knowledge, but a firm basis for training was built up.

Naval ratings in peace time, apart from technical personnel entered the service as boys and were trained on the hull of H.M.I.S. 'Dalhousie'. Early in 1940 a new land establishment for the training of boys was set up at Manora. In accordance with naval practice it was run exactly like a ship would be and was named H.M.I.S. 'Bhadur'. The school was originally

designed to accommodate 300 boys but was enlarged considerably later. In view of the great complexity of modern naval education another junior boys training centre known as H.M.I.S. 'Dilawar' was set up. Boys were admitted into this school at the age of 14, spent a year and then went to the 'Bhadur' for their final two years training.

For the period of the war a second method of entry into the navy was provided by recruitment of 'special service ratings' enlisted for five years or less, if sufficient, and thereafter to be transferred to the R.I.F.R. These ratings were trained in the H. M. I. S. 'Dalhousie'. Recruits were put through a four weeks educational and a four week 'new entry' course in which they gained an elementary knowledge of the customs and organisation of the service. After this stokers went to the mechanical training establishment for their technical course. Seamen went to a four weeks elementary seamanship course and then a nine weeks gunnery course, with evening seamanship classes; then back to the 'Dalhousie' for seven weeks of advanced seamanship including a final week of examinations before they were drafted out to service.

The signal school was expanded to train the many new special service ratings required for the communication branch. This school also trained a number of reserve officers as instructors.

For anti-submarine work a temporary school was opened in May 1940 while a new permanent school was completed and equipped before the year 1941. Apart from the training of ratings for anti-submarine work a number of reserve officers received courses at the school.

In August, 1941 the foundation stone of the Torpedo School was laid by His Highness the Maharaja Jam Sahib. The ceremony drew attention to an important development in the navy's work. By its possession of a torpedo branch the navy was able not only to train personnel in the use of torpedoes but also to centralise instruction in the operating and maintenance of ships' electrical equipment. In addition to preparing recruits for the Torpedo Branch the school provided courses for trained men desirous of obtaining the higher qualifications that led to advancement.

During the same period the H.M.I.S. Signal School was expanded into one of the largest and most modern institutions

of its kind in the Commonwealth. Classes were held for men belonging to war ships and merchant vessels from countries overseas.

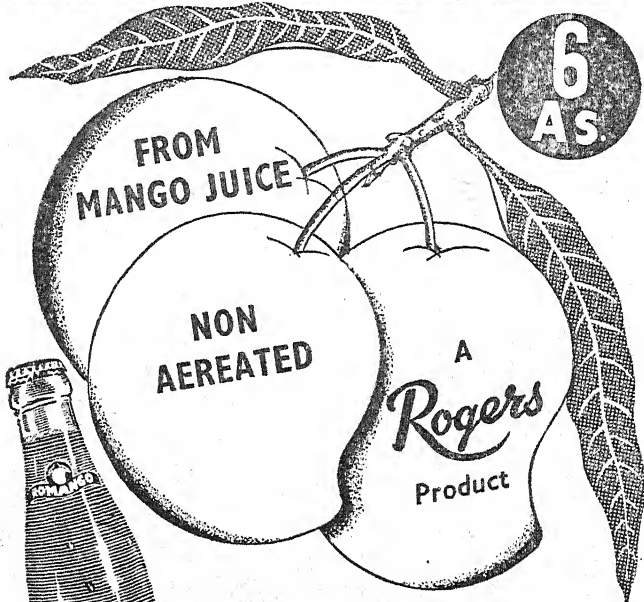
In 1943 the new Gunnery School at Karachi was opened by Vice-Admiral J. H. Godfrey, Flag Officer Commanding, the Royal Indian Navy. Accommodation till then available in Bombay had been cramped. The new school was a magnificent building with the latest equipment for teaching the theory of gunnery and most modern weapons of their type for practical work.

Started in the heart of Rajputana at Pilani, Jaipur State, was the Cinnaval Centre run jointly by the Labour Department and the Navy's Training Directorate to turn out artificers and shipwrights. The building and some of the machinery was lent for the duration of war by Mr. G. D. Birla and the six month's course was based partly on the syllabus of the Royal Navy's Mechanical training Establishment at Chatham.

During the years details were made public of the work done by the R.I.N. Landing Craft Wing. This trained crews for the landing craft as well as beach parties and the centre where training was given developed into the largest naval establishment in India. Because navy could not itself provide all the many naval officers and ratings required, volunteers were obtained from the Indian Army and under guidance from the R.I.N. instructors they became sailors.

A unique feature of India's naval development was the large and increasing number of Indian Officers who were in command of the appointments ashore or afloat including key staff appointment. The strength of Navy's personnel rose to more than ten times the prewar strength.

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AIR FORCE

By the end of 1939 the Indian Air Force had increased from its original flight to a full squadron of aircraft with a strength of over two hundred officers and men, not including the growing volunteer reserve. Under the general expansion of Indian Armed Forces announced in 1940 the Indian Air Force was to be expanded to a total of twelve flights so as to produce a strength of three squadrons of three flights each by the end of 1941 and an equivalent of four squadrons of three flights each by the end of 1942. The pace of expansion was conditioned not merely by the limited supplies of aircraft, both training and actual service, but also by the shortage of skilled ground staff and senior non-commissioned officers as instructors. During 1940 the supplies of aircraft which could be spared for India, either from Commonwealth resources or from the United States of America, were very meagre. By the early months of 1941, however, the situation became brighter and a revised and a much expanded programme was inaugurated. By September, 1941 the situation improved still further and it was accordingly decided to absorb at once into units, all pilots, observers and other personnel as they became trained until all units were upto strength.

In 1940 twenty-four Pilots who had completed their training for the Indian Air Force were seconded to the Royal Air Force for service with the British and Commonwealth pilots engaged in the defence of Great Britain.

In addition to the expansion of the Indian Air Force, units of the Indian Air Force Volunteer Reserve were formed shortly after the outbreak of war to assist in the defence of India's major ports. They contained both regular and volunteer elements. Three quarters of the officers and ground staff were Indians. Another important step was the creation of Indian Observer Corps to record the movement of hostile aircraft and to relay the information to Fighter Headquarters.

The year 1942 was the most important in the till then history of the Indian Air Force. By this time the Indian Air Force had spread its wings farther afield than ever before, to the East and to the West. For the first time it was in action.

against a major power. Its aircraft took a large share in the gigantic task of protecting India's miles of coastline and the many ships approaching her shores with vital war supplies and troops. The protection of shipping in the vicinity of India's coasts was entrusted to independent flights which were situated at the principal ports. They shepherded the many ships entering and leaving those ports and the flying crews gained considerable experience in combined coastal defence operations with the Royal Indian Navy. It was an I.A.F. unit which first reported the position of the Japanese fleet off the coast of India during April, 1942. During the later stages of the Burma campaign a number of Indian pilots, both service and civil, were employed on communication duties in the war zones, particularly during the evacuation. The air requirements of the North West Frontier were met by the I.A.F., squadrons. In June 1942 a detachment of one of the squadrons was despatched to Sind to assist in rounding up Hurs. Another important task undertaken by the Indian pilots was flying transport aircraft to and from war areas in the Middle East.

When I. A. F. units were transferred to Burma, units were formed to replace them in India. The Indian Air Force Reserve was abolished and all personnel was embodied in the regular Indian Air Force. During the latter half of the year No. 1 squadron which was the original and only regular squadron existing at the time of the outbreak of war was re-equipped with aircraft which had begun to arrive from England. The squadron was presented with a crest designed by an officer of the units and approved by His Majesty in October, 1942. An historical day for the I. A. F. was July 12, 1942, when H. R. H. the Duke of Gloucester presented the general Badge and Ensign to the Indian Air Force at Risalpur. This was fitting recognition of the work done by it and representatives of all units attended the parade. The Duke paid a tribute to the work of the I.A.F. "Your history as an Air Force is brief", he said "but in operations on the North West Frontier and in Burma your exploits rank equally high with those of the Allied Air Forces."

The expansion of the I.A.F. continued unabated in 1943 and on a scale without parallel in the history of the service. Machinery was set in motion for the completion of the I.A.F.

as a self-contained service. Another outstanding development was the appointment of an Inspector-General to the I.A.F. The officer detailed to fill this post had considerable operation and administrative experience. His function was dual to deal with the ad hoc problems connected with conditions of service, welfare, efficiency and general administration as it effected units of Indian Air Force, as well as officers and Airmen then serving with the Royal Air Force. His second function was to consider plans for the setting up of a self-contained Indian Air Force, serviced and administered by Indians. In August 1943 an Indian Air Force Officer Wing Commander, S. Mukherjee (now Air Marshal and Chief of Air Staff) was appointed to command an operational station at Kohat.

A SHINING PAGE

India's youngest service wrote a page in its short history during 1944 which will remain a shining example and inspiration to the officers and men of Indian Air Force. For the first time full use was made of I.A.F., squadrons in the offensive operations on the Burma front and how well they carried the flag of the Allied Nations could not be better expressed than in the words of Air Marshal Sir John Baldwin, Air Commander of the Third Tactical Air Force, 'under which the I.A.F. squadrons operated. 'The air and ground crews of the I.A.F. have made magnificent contributions to our success. You and your pilots have earned honour and glory. When victory is won, India will owe a great debt of gratitude to her flying sons of the Indian Air Force' he said.

During the campaign the first award of the D.S.C., to an I.A.F. officer was announced. This went to Squadron Leader Menar Singh, 29 years old pilot commanding a Hurricane Squadron operating over Arakan. Later three awards of the D.F.C., were made to Squadron Leader Arjan Singh, Flying Officer D.G. Bhore, and Flying Officer J. C. Verma. These awards were not only an honour for the officers receiving them but also for the service as a whole.

The formation in November, 1943 of the Air Command, South-East Asia, under the Supreme Allied Commander led to the change in the organisation of the Air Headquarters, India Command and a restatement of the responsibilities of the Air Officer Commanding. While still being responsible

to the Commander-in-Chief for the control and administration of the Air Forces allotted to the North West Frontier he was given more specific responsibilities for the development of, administration, terms of service, recruitment and selection of personnel of the Indian Air Force in accordance with the Government of India policy.

TRAINING

Upto the outbreak of war officers of the Indian Air Force, as of the Indian Navy, were trained in England. With the outbreak of war, recruitment on a regular basis, both for flying and ground staff was abolished and replaced by recruitment to the Indian Air Force Volunteer Reserve. Immediate steps were also taken to establish training schools in India for all branches of the service.

To begin with training was carried out at the Air Force Training School, Risalpur, both for Europeans and Indians. Later schools for the Indian Air Force were established at Lahore and Ambala and in 1941 at Begumpet (Hyderabad) and Jodhpur. There was also inaugurated in 1940 an important civil aviation training scheme, designed initially to turn 300 pilots, and 2,000 ground staff per year for two years.

A special committee was set up in 1942 to co-ordinate and control the training at various centres. An Operational Training Unit was started to bring I.A.F. and R.A.F. squadrons upto operational standard and an Armament Training Unit was formed to afford pilots leaving the Service Flying Training Schools practice in gunnery and bombing. An administrative and Special Duties course was then turning out officers as adjutants, cipher officers etc., and a Signal School was established for the purpose of training wireless operators in every way. Other training expansion included courses in mechanical transport driving, parachute packing and fire fighting.

By 1942 the I.A.F. had seventeen technical and non-technical schools located far and wide throughout the country. The schools catered for all trades connected with the I.A.F. The training at these schools was carried out according to the same high standard as prevailing in the Royal Air Force.

The training of air crew and ground personnel, both technical and administrative, was kept up to the same standard of excellence as set by the Royal Air Force. In 1944, however, two operational units which existed were consolidated into one unit where all I.A.F. Fighter Training, Fighter Reconnaissance Training and Light Bomber Training was undertaken. Pilots destined for ground attack squadrons were given a specialist training at Low Attack Schools. Wireless Operators and Air Gunners were trained at an Air Gunnery School and 'crewed up' with pilots at the O.U.T. A new school was opened for the training of flying instructors. This catered for I. A. F., and R. A. F., pilots and implemented the policy of providing Indian instructors for the Indian pupils where possible.



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PARTITION & AFTER

Prior to August 1947, the Indian Armed Forces were overwhelmingly officered by the Britishers. There were ten thousand British officers in the Indian Army. Only half a dozen of the brigade area, and sub-area commands were held by Indian and there was no Indian Officer Commanding a division, an area or any of the army commands. Out of a total cadre of eight hundred and fifty, there were two hundred British Commissioned and warrant officers in the R.I.N., while one hundred officers and six hundred airmen were working on the R.I.A.F. personnel.

On August 15, 1947 India got her freedom. But India, as she was known before, existed no more. The ancient and historic land was broken up and two new Dominions, INDIA and PAKISTAN were born. This involved the division of the Armed Forces which for generations had functioned as a closely knit unit, displaying the highest qualities of fellowship and common sacrifice among the soldiers. Forming a part of the same fabric the Indian soldiers spoke the same language, shared their joys and sorrows alike, and fought shoulder to shoulder against common enemies on the battlefields all over the globe. Together they guarded the honour, the frontiers and outposts of India, and the friendship they developed on the unit parade grounds and in recreation rooms was intensified on the bullet swept fields. On August 15, ended one golden chapter in the history of the Indian Armed Forces one of the finest fighting machines in the world when they were reconstituted into the Armed Forces of India and Pakistan.

BASIS OF PARTITION

The problem of the reconstitution of the Indian Armed Forces was not, so easy one, for the units had a mixed

composition and were organised on a territorial basis. After some negotiations it was decided by the Partition Council that the division be based on the following :—

1. That the Indian Union and Pakistan should have each within their own territories forces which (a) are with effect from August 15, under their own operational control (b) are on August 15, predominantly composed of non-Muslims and Muslims respectively.

2. That the moveable stores and equipment such as vehicles, guns, tanks etc., should be divided between the two armed forces in proportion to their respective strength.

STAGES OF PARTITION

The partition was effected in two stages. First stage comprised more or less rough and ready division of the existing forces on a communal basis followed by immediate movement into Pakistan area of all Muslim majority units that were stationed outside that area and movement into India of exclusively non-Muslim or non-Muslim majority units then stationed in Pakistan area. The next stage consisted in the combing out of the units themselves on the basis of voluntary transfers. This option, however, was not given to Muslims from Pakistan and Hindus from India then serving the armed forces.

The Indian Army at the time of partition comprised of 30 percent Muslims, 7 percent Gurkhas and the rest non-Muslims. In the Navy and Air Force the proportion of Muslims and non-Muslims was 40-60 and 20-80 respectively. The governing principal in allocating units of infantry, armoured corps, artillery and engineers was their composition. In order to avoid unnecessary transfer of individual soldiers Muslim-sub units of predominantly Hindu units, ordered to move into India were held back in Pakistan. Similarly Hindu sub units were detained in India.

The division of the navy was made, in the words of Lord Mountbatten on common sense lines, in that it was based on the actual needs of the two Dominions rather than on exact arithmetical split. A middle course was adopted in the case of the Air Force.

The number of units of the army allotted to the Dominions was not, however, a correct index of the propor-

tion assigned to them, for it did not take into consideration Gurkha units. Then again the number of units allotted referred only to regiments and as a regiment could consist of anything from 3 to 6 battalions, the proportion of regiments did not exactly reflect the proportion of active battalions. Some units were smaller than others and many stood in the need of being reorganised after the voluntary transfer of individuals had taken place.

THE GURKHA UNITS

There were ten Gurkha Regiments in the army of undivided India. None of them went over to Pakistan. By an interim agreement with the U.K. Nepal and India six of them were transferred to the Indian army and four to the British army. In the final settlement reached on November, 1947-9 arrangements were made for the continued employment of Gurkha officers and men in the Indian Army and it was decided that Indian officers would in future be posted in the Gurkha units.

THE BRITISH PERSONNEL

In addition to the Indian Armed Forces there were four regular British battalions stationed in India. As a corollary to the British withdrawal the British forces in India were also withdrawn in stages. The first contingent of the British army left the Indian shores on 7th August 1947 and the last one on February 28, 1948.

DIVISION OF STORES AND ORDNANCE FACTORIES

No agreement could be reached on the division of stores and ordnance factories between the two governments. At one time it was decided to refer the matter to the Arbitral Tribunal. But ultimately a compromise was effected between the two Governments, which provided :—

1. That Pakistan's share of the military stores will be one third of the stocks held in India and Pakistan on the date of the partition or one third of the maintenance and reserve requirements of the two Dominions calculated on an agreed basis, whichever is less. The balance, if any, will fall to India's share.

DISTRIBUTION OF ARMED FORCES IN TWO DOMINIONS AT THE TIME OF PARTITION



**INFANTRY
REGIMENTS**

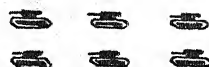


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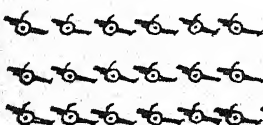


**ARMoured
CORPS**

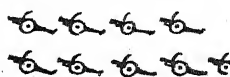


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6



**ARTILLERY
REGIMENTS**



18 1/2

8 1/2



**FIGHTER
SQUADRONS**



7

2

That no physical division of the ordnance factories will take place, the Indian dominion taking full liability for their book value. India agreed to make available to Pakistan a sum of rupees six crores to be drawn as and when required by way of assistance towards the setting up of ordnance factories and a few other essential institutions like a Security Printing Press. There were sixteen ordnance factories, all of which India retained under this agreement.

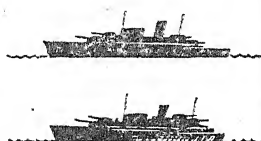
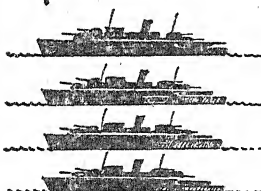
EFFECTS OF PARTITION

Partition changed the contours of defence of both the Dominions. Undivided India had about eight thousand square miles of land and sea frontiers and was exposed to foreign aggression especially on the north-west and north-east from land and on the south from sea. Consequent on partition the burden of India's defence which formerly was the responsibility of Great Britain was transferred to the Dominions. Pakistan then became responsible for the defence of North-West Frontier Province which cost the former government nearly four and half crores of rupees annually and that of 650 miles of sea coast. In addition she was called upon to defend her eastern limb, situated hundreds of miles apart, with Indian territory falling in between. On the other hand, India had to shoulder responsibility for protecting and guarding approximately 2,350 miles of sea frontier, and 2,600 miles of Pakistan borders in addition to her north eastern frontier.

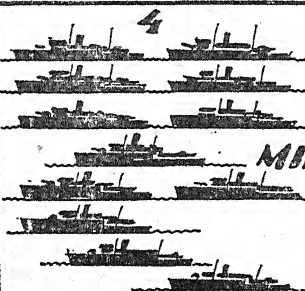
TOWARDS NATIONALISATION

The recruitment of the British Officers to the Indian Army had ceased from October 1944. However those British officers who held regular commissions were to continue till replaced by Indian officers by virtue of their rank and service. As early as November 1946, in anticipation of the disappearance of alien rule, Pt. Nehru emphasised the vital necessity of speedy nationalisation of the Armed Forces and said that the National Army, Navy and Air Force must be officered by the nationals of the country. With this end in view the ARMED FORCES NATIONALISATION COMMITTEE, under the chairmanship of Mr. N. Gopalswami Ayyangar was set up to suggest ways and means of nationalisation of the Armed Forces. This Committee submitted its report by May 1947.

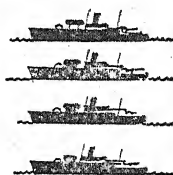
NAVY



SLOOPS



MINESWEEPERS



12

4

CORVETTES



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With the decision to dissolve the Supreme Commander's Office agreement was also reached to terminate the services of the British officers and consequently three months' notice was served on them. A number of them whose services were requisitioned by the Government of India were offered new terms as negotiated with British Government. The policy of the Government of India in this respect was to retain or get on loan the services of about three hundred British officers and instructors as commanders of certain training units and establishments or of certain technical units and proceed with the nationalisation of the rest of the jobs left vacant by the withdrawal of the British personnel. The Indian Government tackled the situation with vigour and despite many odds and heavy responsibilities accomplished in a surprisingly short time the Indianisation of the Armed Forces.

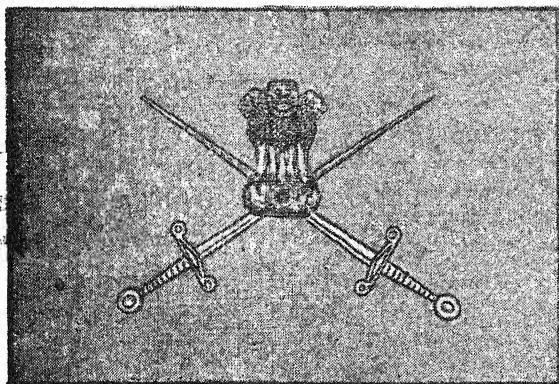
INDIAN STATE FORCES

On April 1, 1949 the administrative control of the Indian State Forces was transferred to the Indian Army. Units of ISF were, however, allowed to retain their separate entities for some time and during this transition their training and equipment were to be brought to the level of the Indian Army. This was expected to be completed within a year's period when complete integration of the ISF with the Indian Army was to be effected.

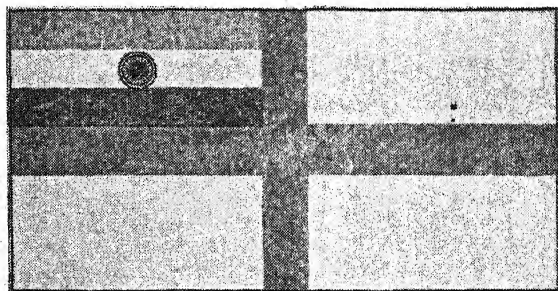
NAVY

While in the case of the army the Government had some basic structure, however inadequate or imperfect it might have been, it could hardly be said to have had a navy of its own at the time of independence. The small force of ships and escort vessels India possessed was merely an adjunct of the Royal Navy. Even this force was reduced further when one third of it went to Pakistan together with three of the most important naval establishments. Only four ships, two frigates and mine sweepers and a landing craft wing was left to India.... a force totally inadequate for the defence of her 3,000 miles of coast line. Plans for the expansion of the navy were, however, immediately taken in hand and before the year was out INS Delhi formerly HMS Achilles of River Plate fame, was acquired by the Indian Navy under agreement with the United Kingdom. Its acquisition was

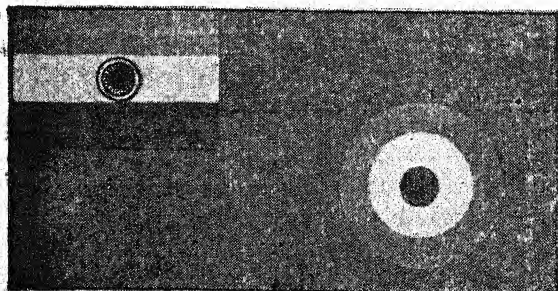
ENSIGNS



ARMY



NAVY



AIR FORCE

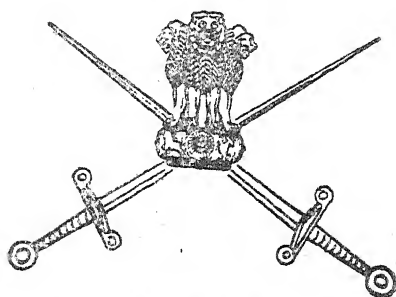
followed by one appointment of Chief of Naval Staff and Commander-in-Chief of Admiral Sir Edward Perry who had commanded the Achilles during the battle of the River Plate. Next year three destroyers each with a displacement of over 1,700 tons and carrying four 4.7" guns, eight torpedo tubes and anti-submarine equipment and weapons, were purchased and they formed the first destroyer flotilla, while with the frigates Jumna, Sutlej, Kistna and Cauvery which came to India's share after partition. INS Tir was used as a training ship. As a consequence of partition India lost three of her training establishments and a number of experienced officers and men. With the help of the British Admiralty the training of forty six cadets every year was taken in hand and by the middle of 1948 the required complement of officers and men for INS Delhi had completed their training in England. Simultaneously the Government expanded the training establishments at Jamnagar and Bombay while new training centres were opened at Cochin and Visakhapatnam. By 1950 the ships of the Indian Navy were ready to visit neighbouring countries.

AIR FORCE

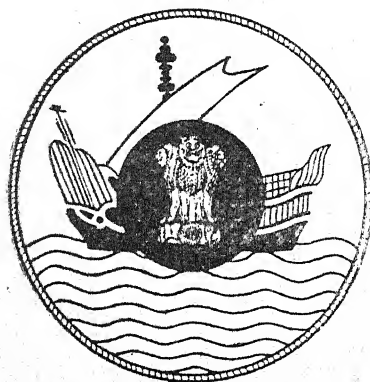
On the morrow of partition the Indian Air Force was a half demolished structure standing on a shaky foundation. The sudden winding up of Air Headquarters, India Command, then controlled by Air Ministry in London, and withdrawal of the RAF units with their British Staff threw into confusion the entire organisation of Indian Air Force. Thus the reorganised Air Headquarters had to undertake the task of building up the Air Force of free India almost from its foundation. A balanced and an operationally efficient air force, required various types of aircraft for different operational duties and a network of training, maintenance, supply and other administrative organisation that could make it tactically and strategically effective for air defence. This difficult and delicate task was taken in hand immediately and by the end of 1951 the Indian Air Force had ten squadrons. The Defence Ministry also took care to keep the services supplied with modern equipment as far as possible. In 1948 three jet propelled Vampires were acquired and after successful tests in various parts of the country more machines were purchased. A new general reconnaissance unit was also raised and another was equipped with four-engined

CRESTS

ARMY



NAVY



AIR FORCE



Liberator heavy bombers. A new 'all through' flying training scheme was introduced early in 1949 with a view to improving, flying, training and speeding up both standard and number of future pilots. A technical training college was opened in the same year near Bangalore. Plans were later formulated for the establishment of an Air Defence Reserve in order to augment the personnel of the IAF in times of emergency. The works programme adopted envisaged the construction of at least three permanent Air Forces Stations with modern operational airfields.

'ROYAL' NO MORE

India was declared a sovereign Republic and a new constitution inaugurated on January 26, 1950. Effective from that date the use prefix 'Royal' wherever it occurred in the designation of a service, a regiment, a corps or a unit of the Armed Forces, was discontinued. Similarly, the expression 'His Majesty's Ship' before the name of the vessels of the Navy was dropped. The badges of rank, cap badges and buttons were also Indianised. The crown was replaced with 'Asoka lions'. The stars which used to be four pointed before were made five pointed. With this there was nothing left in the Armed Forces which could remind the officers and men of the subordinate and delineated position as in the past.

Sir CHARLES LUCAS, writing in 1926 on the possibilities and desirability of Indian officers for the Indian Army said "But India is not naturally productive of leadership. The people are inherently and by tradition disposed to look to authority. They will obey commands with docility, but few will care to come forward and lead. Natural propensity of India is to place themselves under those who will lead rather than to take up the burden and responsibilities of leadership themselves. India has never furnished any great and first rate military leaders whose names ring out in the annals of the world". Sir Lucas, a typical die hard British, had displayed a tragic lack of knowledge of Indian history. He had ignored, deliberately, the leadership provided by the Mahrattas in the South and the Sikhs in the North. Unfortunately there were no Indian officers in the World War I to give lie to this most distorted version of Sir Charles

Lucas. But the reply came from the Indian officers, recruited before and during the World War II. These officers, despite the natural handicaps training and experience (most of the officers having been recruited during the war and given very short training) proved themselves equal to any British officer in the same position. Many of them excelled and earned outstanding praise from the British superior officers. The real opportunity to prove their ability came to the Indian officers only when India was wholly free and her forces were entirely officered by them. Judging from their performance in Kashmir not even best of the military leaders of the world will have anything to say against the young officers posted on most responsible positions.

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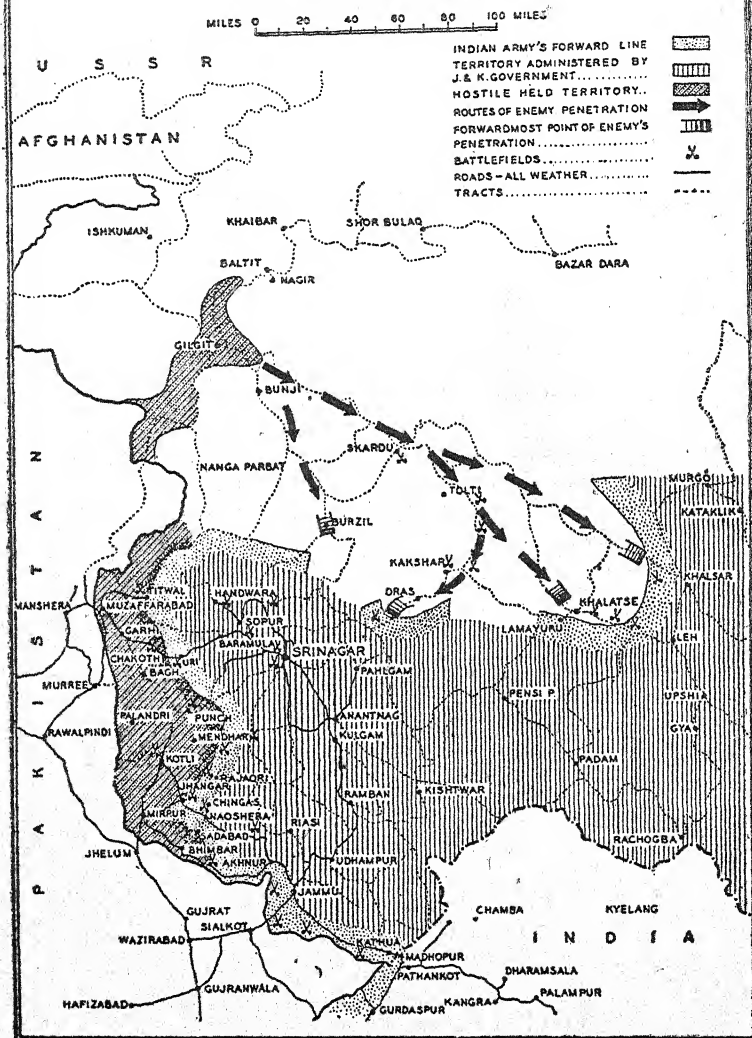
CRUSADE IN KASHMIR

Righteousness of the cause and selflessness in performance, a rare and patriotic fervour and faith which triumphed over nature and above all, a high sense of chivalry... in the true sense of the term, namely 'disinterested devotion to the cause of the weak and the oppressed' are what make the Indian Armed Forces campaign in the beautiful, bountiful State of Jammu and Kashmir a crusade. Free India's first military campaign has enhanced the Indian Armed Forces' reputation for high discipline, devotion to duty, right conduct and disinterested service the code of 'Dharma' that the Lord preached to warrior Arjuna on the battlefield of KURUKSHETRA.

August 15, 1947, the day INDIA won her freedom and the day when there were boundless rejoicings all over the land despite the tragic partition and sufferings on that account, found the State of Jammu and Kashmir in a unique and unenviable position amongst the Indian States. While other Indian States had no choice but to accede to the Dominion with which they were contiguous and they did so in rapid succession. The State of Jammu and Kashmir was contiguous with both INDIA and PAKISTAN she was almost wedged between the two, had common borders with both and torn between its economic and political affiliations with the two Dominions. The State of Jammu and Kashmir, therefore, could not make up her mind and pleaded for time to think it over before casting her lot with one or the other Dominion.

While postponing the decision on accession, the Maharaja of Jammu and Kashmir sought to maintain the status quo

WAR MAP OF KASHMIR & JAMMU AS ON THE 27 TH OCT. 48



C. PAKRASHI

NISL/0876 - A.A. ROOM

by immediately entering into a 'stand still' agreement with Pakistan. At a press conference held in New Delhi, Sheikh Mohd. Abdullah, the leader of the largest and most influential political party in the State, appealed to INDIA and PAKISTAN not to hustle his people into a decision on the fateful question of accession. He declared that his first task was to achieve responsible government in his State; when he had accomplished that objective, he promised that, he would seek the verdict of his people on the issue of accession and faithfully abide by it.

The Government of India accepted Sheikh Abdullah's standpoint and even backed his demand. Pakistan, however, appeared to be in a hurry to accomplish accession to that Dominion. Within a few days of partition Pakistan applied an economic squeeze and rigorously curtailed the supplies of petrol, salt, sugar, cloth and other consumers' goods.

As the economic screw tightened on the State, its borders were harassed by raiders from Pakistan. Between September 3 and October 20 the raiders peirced the border at several points almost every day. Organised armed bands plundered, looted and murdered inhabitants of border villages and taxed and stretched the police and military forces of the state. By D. Day (October, 20) the defence of the State all along the border was punctured well, with the State Forces dispersed and encricled in penny pockets all over Jammu. The raiders reckoned that they would be in Srinagar on October 26. Within four days of crossing the border, the invaders had covered more than half of the distance to their coveted objective. They had overrun URI and captured Mahura, the electric power station, fifty miles from Srinagar and plunged the latter city in darkness. Baramullah and Srinagar themselves were threatened and it appeared that nothing could stop the invading hordes from getting to Srinagar.

On October 25 the Maharaja sent an SOS to the Government of India and asked for military help. This was supported by Sheikh Mohd. Abdullah. On October 26, the Maharaja signed the Instrument of Accession and on the same day the Government of India took the momentous decision to send military aid to Srinagar.

On October 27, the first batch of Indian troops under the command of Lt. Col. D. R. Rai flew to Srinagar. When the troops were flown it was not sure that the airfield itself had not fallen into the hands of the enemy. After an interval of tense suspense at 10-30 A.M., a wireless flash from Srinagar announced the safe landing of the first wave of troops. Over one hundred civilian aircraft were immediately mobilised to fly more troops, equipment and supplies. IAF and civilian pilots rose and worked day and night to make the air-lift a success. The ferry service continued upto November 27, and during this period 704 sorties were flown from Delhi. The day after Badgam engagement, Sardar Vallabhai Patel and Sardar Baldev Singh arrived in Srinagar and found the situation still very grave. They returned to Delhi the same day and reported the situation to the Defence Committee of the Cabinet. Consequent upon the death in action of Col. Rai, Brigadier L. P. Sen, who had won his DSO in the famous battle of Kangaw in the Arakan during the last war arrived in Srinagar and took over command of all Indian and State Forces in the Srinagar Valley. Major General Kalwant Singh arrived in Srinagar on November 5, and took over command of all forces in the State. On January 20, 1948 Lt. General K. M. Cariappa took over the Western Command. In the last week of that month the General paid a visit to Naushera the Headquarters of 50 para Brigade commanded by Brig. Mohd. Usman. As the operation front expanded and the number of Indian troops increased the forces in Jammu and Kashmir were split into two divisions and placed under two divisional Headquarters at Jammu and Srinagar. Major General K. S. Thimaya was placed in command of Srinagar Division and Major General Atma Singh in command of Jammu Division. This was done on May 4, 1948. A tactical Headquarters was also established in Jammu. The conduct of the operations were directly placed under Western Command. At the same time a Line of Communication Sub-area was added to the Jammu and Kashmir set up. Later in October a Corps Headquarters was set up in command of the two divisions and the L. O. C. Sub-area to relieve the Western Command of the direct responsibility. Lt. General S. M. Srinagesh was appointed the Corps Commander and Air Commodore A. M. Engineer took over the Command

of No. 1 Operational Group of the RIAF which planned and executed all air operations in Jammu and Kashmir.

On December 30, 1947 India took the Kashmir Dispute to the United Nations. This was done under Article 35 of the Charter of United Nations. India demanded that the Security Council take immediate steps to :—

1. Prevent Pakistan Government personnel, civil and military, participating in or assisting the invasion of Jammu and Kashmir.

2. Call upon other Pakistan nationals to desist from taking any part in the fighting in Jammu and Kashmir.

3. Deny the invaders (a) access to and use of its territory for operations against Kashmir (b) Military and other supplies (c) all other kinds of aid that might tend to prolong the present struggle.

While demanding the above, the Government of India added that military operations in the invaded area have, in the past few days, been developing so rapidly that they must in self defence, reserve to themselves the freedom to take at any time when it may become necessary, such military action as they may consider the situation requires.

On January 17, the Security Council adopted a resolution appointing a Commission composed of three members of the United Nations, one selected each by India and Pakistan and the third to be designated by two or selected. The Commission was to proceed to the spot as quickly as possible and was authorised to investigate the facts pursuant to Article 34 of the Charter, exercise, without interrupting the work of the Security Council any mediatory influence likely to smooth away the difficulties, to carry out directions of the Security Council and report how far advice and directions, if any, of the Security Council have been carried out.

On April 21, the Security Council passed another resolution after considering the complaint from India and after hearing the view point from Pakistan stating that India and Pakistan should do their utmost to bring about early cessation of fighting and that the question of accession be decided through the democratic method of free and impartial plebiscite.

The Commission first met in Geneva on June 15, 1948. On July 7, the Commission arrived in Karachi and in New Delhi on July 10. The Commission returned to Karachi on July 31 and after hearing the views of the two governments it drew up and adopted its resolution on August 13. On August 14 the Commission presented simultaneously to the two governments its proposals for cease fire and truce agreement as embodied in its Resolution of August 13, 1948.

The Government of India while accepting the resolution and the Cease Fire Proposals drew the attention of the Security Council to the following :—

That paragraphs A. 3 of Part II of the resolution should not be interpreted or applied in practice so as (a) to bring into question the sovereignty of the Jammu and Kashmir Government over the portion of their territory evacuated by Pakistan troops (b) to afford any recognition of the so called 'Azad Kashmir Government' or (c) enable this territory to be consolidated in any way during the period of truce to the disadvantage of the State. The Chairman of the Commission vide his letter of August 25, 1948 conveyed that interpretation of the Resolution as expressed by the Government of India coincided with its own. The Government of Pakistan suggested that the only two practical ways of dealing with the Jammu and Kashmir situation were (a) to bring about a cease fire, pure and simple, such as in Part I of the Commission's Resolution of (b) to attempt at the very start a complete and final solution of the entire Jammu and Kashmir question. The two Governments informed the U. N. Commission on January 1, 1949 that they had accepted the principles proposed by the Commission for the holding of a plebiscite in the State of Jammu and Kashmir for the purpose of determining the State's future status and both governments ordered the forces under their respective control in the State to cease fire effective at 11.59 P.M., January 1, 1949.

BATTLES IN KASHMIR

The Indian troops under the Command of Col. Rai contacted the raiders on October 27, 1947. The raiders were already in Baramullah and only within thirty five miles of Srinagar. Without waiting for further reinforcements

Col. Rai took the decision and crashed into invaders columns at Baramullah. The last party of the Indian troops had run the gauntlet of heavy fire in order to escape the trap. Many fell dead and among them was Col. Rai himself. Dead in action he was though, he had succeeded in his object he had staggered the enemy, disorganised his column and halted his advance for long enough for reinforcements to arrive from India. By his dash and courage vital progress in the saving of Srinagar was achieved.

The troops, left without the Commanding Officer, fell back to a point only three and half miles from Srinagar. But the same night they went forward again, occupied Pattan and went even further to 26th milestone from Srinagar. There they found the raiders swarming around the countryside. They then fell back on Pattan and dug in.

The situation in the first week of operation was 'touch and go'. The threat to Srinagar continued even increased. For the Indian Army, the week was one of desperate struggle to gain time for adequate troops to be flown from Delhi. The struggle took the shape of offensive delaying actions. During this period a Brigade Headquarters and a flight of RIAF Spitfire, Tempest and Havar air-craft for closer co-operation were flown from Delhi. The 161 Brigade arrived in Srinagar close on the heels of Sikh Regiment. Brigadier L. P. Sen took the command of all Indian and State Forces.

On November 3, a company of the 1st Kumaon Regiment which had in the meantime been flown in under the command of Major Somnath Sharma, went out on fighting patrol to Badgam, nine miles South East of Srinagar and hardly half a mile from the air field. The company ran into an enemy force estimated at five to seven hundred and supported by 3" and 2" mortars. The encounter lasted for four hours. Major Sharma led his men with remarkable skill and inflicted many casualties on the enemy. Brigadier Sen realising that Indian troops were faced with a body of well armed raiders infinitely superior in numbers, immediately despatched reinforcements. Before they could reach, Major Sharma was killed with a 2" mortar bomb exploding near him. The air support by the R.I.A.F. proved invaluable. This removed the immediate threat to the airfield and gave to the Indian troops breathing time.

They died in action



Brigadier Mohamimed Usman who died in action at Jhangar on the night of July 3-4, 1948. His body was flown to Delhi and was given a state funeral with full military honours.



Lt. Col. D. R. Rai, Officer Commanding the first wave of Indian troops in Srinagar, and who died in action on the outskirts of Baramullah on October 27, 1947.



Major Somnath Sharma who led his men with remarkable skill and inflicted many casualties on the enemy but who died when a 2" mortar bomb exploded near him on November 3, 1947.

When it was found that the raiders could bypass Indian positions at Pattan, seventeen miles outside Srinagar and infiltrate into the city itself, Brig. Sen decided to pull back his troops to a point four and half miles due east of Srinagar city. In so doing he strengthened the defence of the city as well as shortened the line of communication of his troops. By this time one squadron of armoured cars adventured their way to Srinagar by perilous three hundred miles road from the East Punjab via Jammu and the 9,000 ft. high Benihal Pass and over rickety bridges fit only for light tourist traffic.

The raiders' main position had in the meantime been spotted and the stage set for the projected offensive. On the morning of November 7, Indian troops attacked the enemy. At the same time one troop of armoured cars and a detachment of infantry which was patrolling in the Gandhar Bad area were ordered to manoeuvre back so as to take the enemy from the rear. The battle at Sheltang, the first offensive engagement, lasted for twelve hours. Traped from three sides surprised by armoured cars and pursued from the air the raiders fled westward in disorder. With this battle the Indian Army turned the corner. It was decisive victory which broke the back of the enemy drive, demoralised him and enabled the Indian troops to go over to offensive. It removed the threat to Srinagar.

Indian troops took up the pursuit and arrived in Pattan the same evening. The next day they made for Baramullah and after some skirmishes on the road, entered the town in the afternoon. Slight delay caused by the shortage of petrol, had however, enabled the main party of raiders to escape from Baramullah along the road to Ori and Domel. Baramullah was found in shambles. The raiders had run amuck in the town, burning, pillaging, looting and murdering.

The Indian Army's advance beyond Baramullah was slowed down by the same nature of terrain and shortage of petrol. The road beyond Baramullah was overlooked on either side by thickly wooded hills ideal for ambush. Besides, the invaders had blown up bridges behind them in their retreat.

Making diversion wherever possible the Indian infantrymen later took up the pursuit leaving behind their vehicles. The Mahural power house was found only slightly damaged.

This was repaired and lights were on in Srinagar within ten days symbolising return of security to that fair city.

On November 14, the Indian troops entered Uri without much of battle. With the recapture of Uri the first and the most hazardous phase of the Kashmir valley was removed.

As the tribal invaders were triumphantly driving up the Domel road towards Srinagar, in remote northern frontier district of Gilgit, a local revolution was being hatched under the inspiration from Kashmir. Certain British and Muslim officers of the Gilgit Scouts, a Frontier Military Formation, actively conspired to get Gilgit merged into Pakistan. On October 31 the residence of the Governor was surrounded by the rebels and immediate surrender demanded. The Governor was put under arrest in the morning of November 1, and a rebel government was formed. Pakistan's flag was flown in the Scout Lines. In the third week of November Sardar Mohd. Alam arrived from Peshawar and established himself as Pakistan's Political Agent. Pakistan opened air service to Gilgit poured civil and military officers and took over the administration gradually.

While attention was focussed on Srinagar, a grave situation was developing in the Jammu province, where hostiles had seized a considerable stretch of territory adjacent to Pakistan border and were advancing towards the capital. Whereas Kashmir in the north faced essentially foreign invaders, in the west in Jammu the raiders were reinforced by local insurgents, backed from across the border with supplies and equipment. The State Forces which had taken up positions in the towns near the border had been surrounded at Mirpur, Kotli, Punch, Jhangar, Naushera, Bhamber and Rajauri. Rescuing the refugees and relieving the encircled State forces became the first task of Indian Army in Jammu.

The relief operations began with home column despatched from Jammu in the direction of Naushera and Jhangar and other moving south from Uri with Punch as its objective. Setting out on November 16, the Jammu Column under Brigadier Paranjpe Y. S., relieved the State Force Garrison at Naushera and Jhangar by November 19. Next day the column advanced towards Kotli and after difficult march and encountering numerous road blocks and having heavy

slipping reached its destination. The garrison was relieved on November 27 and 9,000 refugees were brought out without any loss of life. The State Force garrison at Mirpur could not be relieved because there were no Indian troops available then but it found its way out on November 25, bringing with it nearly 3,600 refugees. Though the attempt to relieve Punch was not totally successful the additional battalion under Brig. Pritam Singh enabled the garrison to hold out for full one year until it was finally relieved.

Determined to eject Indian troops from Jhangar the raiders mounted a strong attack on the night of December 23-24. Approximately 6,000 men attacked the Indian garrison consisting of depleted battalion while about 3,000 intercepted the Naushera-Jhangar Road thus preventing reinforcements. At the same time no air activity could take place on account of bad weather. The Indian position was overrun and troops were forced to withdraw to Naushera. Encouraged by this success 2,500 raiders attacked Naushera camp but were easily repulsed. After the loss of Jhangar it was decided to stay put in Naushera and postpone the offensive operations till more troops were available.

After the visit of General K. M. Cariappa on January 20, and with a view to ensuring the safety of Naushera it was decided to take a feature called Kot Brig. Usman launched the attack on two battalion front. The raiders fought back furiously but Kot and another feature fell into the Indian hands.

Stung by the failure at Kot the raiders massed for a major assault on Naushera itself. The attack was launched on February 6, and the biggest battle of Kashmir campaign was fought. It is estimated that 15,000 raiders attacked Naushera in three waves. One of the attacks had got within fifty yards of the Indian positions and at one particular point the raiders had even managed to enter the Indian positions. After two hours of fierce and desperate fighting the raiders broke the battle and ran helter skelter. About two thousand of them were killed and many more wounded. The booty captured included bren and sten guns, rifles and swords.

To exploit success gained in Naushera it was decided to recapture Jhangar. The advance began on March 15

under the command of Major General Kalwant Singh. The decisive battle for the recapture of Jhangar was fought at Perthal, a steep hill overlooking Jhangar. The raiders who were entrenched on this hill initially put up a stiff fight but their resistance collapsed when the Indian troops pressed home their attack. The RIAF played a valuable part. With the recapture of Jhangar on March 18, the main land route leading into Naushera was secured and the enemy supply line was disrupted.

During the winter months the Indian Army in Kashmir fought two enemies. Holding raiders at bay was easy. Throughout this period the raiders could not gain an inch of territory and every attempt to break through or bypass Uri was beaten back. But Indian Army's joust with 'General Winter' was indeed grim. A majority of Indian troops had never seen snow before. Nor they were armed with special snow fighting equipment. With the blocking of the only land route to Srinagar by snow and the stoppage of air service the supply position became acute. The Indian Army's victory over these elements constituted a fresh chapter in its glorious history, already replete with feats of bravery and endurance. Far from yielding any ground to either enemy the troops actually improved and consolidated their positions on snow bound Uri Front. During these difficult months they were on the defensive confining themselves to long range reconnaissance and offensive patrolling.

When the winter battle was won the melting of snow brought forth new problems for the Indian Army engineers and lorry drivers to contend with. While the Banihal pass was cleared of snow the 200 mile road hewn in the side of the Himalayan ranges, was now plagued with landslides. The sappers and miners had really a busy time keeping the way clear and convoys on the move.

While it froze and covered the Kashmir valley with white mantle winter appeared in a different guise in Jammu. Here it was all slush and quagmire created by the winter rains which impeded mobility and made life miserable. Abnormal rains even swept away bridges along the life line from Pathankot and restricted supply to the troops. Thus while the Kashmir front was liberated the activity in Jammu intensified... thanks to the advantages enjoyed by the enemy

on this front. Stung by their reverses and enjoying these advantages the raiders in Jammu occupied themselves in spirited counter attacks and gained some temporary successes.

The first objective of spring offensive in Jammu was Rajauri, 30 miles north west of Naushera. The operation was distinguished by careful and elaborate ground and air planning. The advance began on April 8. First to be captured was Barwali Ridge seven miles north of Naushera. Chingas, half way to Rajauri was the next. On April 12 the Indian troops came down into Chingas valley and after crossing into the Tawi captured a hill overlooking Rajauri. Rajauri was captured late in the evening. The atrocities committed by the raiders here put Baramullah in the shade.

General Thimaya's projected offensive was directed towards Muzafarabad on the western border. Troops under the command of Brig. Harbax Singh entered Tithwal on May 23rd. The capture of Tithwal signified a major blow to the raiders as it was dangerously close to Muzafarabad, their main base and it disrupted their main line of communication with forward bases in the north and north west.

The threat to Muzafarabad and successes around Uri spread panic and alarm in Pakistan and 'Azad Kashmir' Pakistan which till now was helping the raiders covertly, came out into the open and flung in more regular battalions to stem the Indian Army's drive westward. They also brought up 4.2" mortars and medium guns. Beyond Urusa the Indian Army met the hard core of enemy resistance in the shape of regular battalions. The fighting was fierce and desperate. Indian Army's advance was held up between May 20 and 27.

About this time, in Jammu the activity was still confined to sparring with the enemy. preliminary to bigger things to come. Offensive patrolling around Jhangar and Naushera and Rajauri was intensified. Another attempt was made to relieve Punch, this time from Rajauri. Simultaneously a column from Rajauri and another from Punch set out on June 15 and met at Potha on June 17. After the link up a column was sent to Mendhar, an important enemy training centre. This link up, however, proved to be temporary because there were not enough troops to maintain it.

At this time Jhangar continued to be the favourite of enemy artillery practice. On the night of July 3-4 the shelling

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was intense. Some six hundred shells were pumped into Indian position and one of them took the life of Brig. Usman the hero of the battle of Naushera . . . an officer who had distinguished himself as an outstanding soldier, a fearless leader and a popular man who was loved by his jawan and trusted by civilian population. He was the first Brigadier to be killed in action. His body was flown to Delhi and was given State funeral with full military honours.

In summer, the raiders unable to pierce Indian positions at Uri in the west and Jammu in the south sought new adventures in remote, semi-arctic and barren districts of Balistan and Ladakh to bag as much territory as possible. By January the pressure on the small State Force Garrison at Skardu increased. Repeated attempts to send reinforcements and supplies from Srinagar failed on account of difficult nature of the country. In spite of this the garrison ordered to fight 'to the last man and last round' held out grimly. In the meantime the raiders bypassing Skardu overpowered another small State Force Garrison at Kargil and thus cleared the way to Ladakh and Leh.

On May 24, Air Commodore Mehar Singh undertook the most daring operation yet in his colourful career a flight to Leh along an uncharted route at 23,000 ft., and over world's highest mountain ranges. He flew even without oxygen. Accompanying him was General Thimaya. He landed on a rough improvised strip in Leh constructed by a Ladakhi engineer. Studying the situation General Thimaya decided to fly reinforcements immediately. Almost simultaneously with their eastward drive, the raiders moved down south from Gilgit into the Gurais valley and passing over the Razdhanangan Pass (11, 586 Ft.) got to Taraqbal overlooking Bandipura, in the Wular Lake region, 35 miles north of Srinagar. The first air strike towards the north of Wular Lake came on April 28, in the shape of concentrated attack on enemy positions in Taraqbal. General Thimaya in the meantime got ready to meet the threat from the north. Soon after the air strike had driven the raiders out of Taraqbal the Army engineers got cracking with a jeep track to Taraqbal 10,000 Ft., above sea level. The first jeep motored to Taraqbal on May 21. Mules and porters carried ammunition and supplies another eight miles to Razdhanangan where was established the base for operations.

Operations were launched on June 25 and Gurais was captured on June 28. Behind the capture of Gurais lies the story of phenomenal endurance and perseverance by the Indian troops and their engineers. It was a mountaineers war fought in arctic conditions. In the north the raiders penetrated the Zoji La and infiltrated into Sonomarg valley. They were later chased out by Indian troops.

On August 14, the Skardu garrison was, however, overwhelmed and surrendered to sheer weight of numbers. With the fall of Skardu the raiders doubled their pressure on Leh where the Indian reinforcements continued to pour.

As the summer months were fading out there were still two important jobs outstanding. They were (a) reopening the road from Srinagar to Leh and removing the menace to the Buddhist district of Ladakh and (b) relief of Punch garrison which had gallantly held out for a year against repeated assaults and whose position was getting precarious. Both were purely relief operations in no way contrary to the agreement with U. N.

Kashmir Valley was linked with Ladakh by Zoji La. The first attempt to break through Zoji La was made only in September. This and successive efforts failed on account of the positional operational advantages enjoyed by the raiders. It was then thought that tanks which could sit in the pass with impunity, ignore the enemy's small arms fire and blanket the bunkers with shells while infantry advanced was the only workable way. The bold decision to bring tanks was taken. In less than two months the Thangaraju road named after Major Thangaraju who planned the project, from Baltal to Zoji La was laid down. Jammu to Baltal seven Stewart ('Honeys') tanks travelled a distance of 260 miles incognito and under strict secrecy. From Baltal to Zoji La the tanks negotiated their way around slippery hairpin bends and up to a gradient of 3,000 Ft., in four miles. The operations were launched on November 1, instead of October 20 as earlier fixed. The land link between Srinagar and Leh was established after six months of bitter fighting. The RIAF aircraft gave close support to the troops during and after the attack and accurately engaged hostile's known gun positions and concentrations.

In Jammu General Atma Singh launched his elaborately planned offensive for the relief of Punch. The first phase

comprised the capture of Thana Mandi, 12 miles north of Rajauri which was captured after two days. The second phase was the capture of Pir Badesar and Pir Kalewa the capture of Sangiot and its conversion into a firm base and the final break through and link up with Punch. Meeting stiff resistance and capturing feature after feature, the Commander of the Indian relief column Brigadier Yadhunath Singh shook hands with Brigadier Pritam Singh the defender of Punch on November 23. In order to put the link up so gained on firmer and safer footing and to ensure the safety of Punch the Indian troops later had to attack and capture Salotri ridge.

The cease-fire came into force a minute before midnight on the first day of the new year 1949 which brought to a close 15 months of campaign for the Indian Army. Launched upon within a month and a half of the country's freedom under every imaginable handicap and without any planning whatsoever, the Kashmir campaign was a fiery test for free India's Armed Forces. Out of the test they emerged with flying colours.. To their former skill and traditional efficiency was now added a new patriotic fervour. The combination enabled the Indian officer and soldier to work veritable miracles. Mere efficiency was not enough; a high sense of patriotism alone could have conquered the formidable obstacles that the Indian troops met in Jammu and Kashmir. They exploded many a copy book theory of logistics and contributed new and valuable chapters to their war experience. On airstrips which had been pronounced by experts as unfit for fighter aircraft to operate from, RIAF Pilots landed Spitfires and Tempests and took off. Over roads and grounds declared impassable for heavy military vehicles, tanks moved and went into action. Every section of the Armed Forces acquitted itself in the most praiseworthy manner but the RIAF services proved exceptionally valuable as a speedy medium of transport. They transported supplies and equipment to the besieged garrison in Punch and evacuated thousands of desperate stranded refugees. They flew over incredible heights and performed rare feats of aviation while transporting supplies and reinforcements to Leh. They served as 'Air Ambulances' by evacuating the wounded from the battle fronts and thus saved many lives. Their reconnaissance reports proved invaluable to the ground troops.

Every man bearing a rifle requires on an average, seven men to feed and clothe him. The RIASC on which fell the responsibility of feeding an ever increasing troops in an ever enlarging area of action in mountainous regions without any transport facilities, and whatever there were, constantly interrupted and disrupted by floods and snow, worked ceaselessly day and night and thus added another tale of heroism to the already enobling and inspiring story of Kashmir. While our vehicles whose mechanism could withstand this strain deserve special mention but the motor drivers merit whole hearted praise. Grimly did they carry on with their onerous duties, driving over tortuous terrain, negotiating narrow, winding, uneven and slim roads and steep gradients with hazardous drops into deep ravines.

The Indian Army Medical Corps did not confine its activities to extracting bullets from war casualties and hearing the wounded and sick amongst the troops. Wherever they went, they took on the task of looking after the health of local civilian population. One of the problems that the Indian Army was confronted within Jammu and Kashmir was a complete breakdown of civil administration in the liberated areas. Whatever sanitary arrangements there existed earlier collapsed. There were piles of refuse and stink and squalor everywhere. This was a paradise for microbes of disease and epidemics. Malaria and other diseases arising from malnutrition and epidemics like cholera and small-pox were the main enemies that the Indian Army medical units had to contend with. The Army doctors grappled with the task realistically. Exceedingly commendable as the work of the Army Medical Units was the contribution made by the Armed Forces Welfare Womens' Organisation, a non-official organisation set up in 1947 by Lady Bucher, the then Commander-in-Chief, Indian Army, could not and cannot escape special mention.

POLICE ACTION IN HYDERABAD

While the Indian Troops were engaged in bloody combats in the State of Jammu and Kashmir a serious situation was developing in the Dominion of the Nizam of Hyderabad. In his proclamation on June 26, 1947 he wished to be independent. Ignoring and disregarding the advice of Lord Mountbatten, the then Governor-General, the wishes of the majority of the people and the 'geographical compulsion' he put his own interpretation on the most important section of the Cabinet Mission of May 12, 1946. Besides stating that the British could and will not in any circumstances transfer paramountcy to an Indian Government he had added that the void created by its disappearance would have to be filled either by the State entering into a federal relationship with the successor Government or Governments in British India or failing that, entering into particular political arrangements with it or them'. The Nizam, regarded by Muslims in various countries as one of the defenders of their faith, with his own army and police, it was said, had no desire to come under the way of Hindu India any more than the Maharaja of Kashmir had wished to be controlled by Muslim Pakistan.

On 15th of August, 1947 saw the State of Hyderabad without any agreement with the Indian Government. At the same time the Nizam was reported to be anxious not to break off negotiations and accordingly at his request he was given extension of two months within which to finalise his attitude. When negotiations were resumed the Governor General, with the concurrence of the cabinet undertook to continue them on their behalf. After several meetings with the delegations sent by the Nizam a Stand Still agreement was reached in November, 1947 under which all agreements and administrative arrangements on matters of common concern which formerly existed between the Crown Representative and the Hyderabad State, except the Paramountcy functions, were to be continued as between the Government of India and State of Hyderabad. These agreements and arrangements covered a wide variety of matters including the three subjects on which accession of all

States had been accepted viz. : Defence, External Affairs and Communications. This settlement made it clear that Hyderabad did not propose to accede to Pakistan. Speaking on the subject in the Constituent Assembly Sardar Vallabhbhai Patel said, 'Now that accord had been reached', I am sure it will have a wholesome effect on the existing situation and will exercise a beneficial influence on the relations between the two communities both in the State and outside.

On signing the document the Nizam, however, informed Lord Mountbatten: 'I have not been prepared to contemplate accession to either Dominion, but short of this I have been prepared to negotiate with your Dominion upon any other basis. By executing this agreement I am in no way permanently prejudicing my rights as an independent sovereign'. The Governor General replied 'Placed as Hyderabad is, its interests are inextricably bound with those of India and my Government hopes that before the present agreement expires it will be possible for Hyderabad to accede to the Dominion.'

The strongest Muslim organisation in the State was Ittehad-ul-Muslemeen, founded in 1926 and devoted to preserving the power of the ruling class. In 1947 the leader of the Ittehad was Syed Qasim Razvi, a small town lawyer of fanatical appearance and unbounded ambition. Under his influence a private army, distinct from Nizam's regular forces was formed. Its members were called Razakars and were given military training.

With the arrival of Pakistan, the Hyderabad Muslims felt isolated and they prepared to fight for the retention of their power. In 1947 Syed Razvi succeeded in delaying the signing of the 'Stand Still' agreement by one month. He also caused the resignation of Nawab Chattari as Prime Minister and his replacement by an Ittehad magnate Mir Laik Ali. After this the Indian Government began to realise that the Razakars had reached a stage where they held the Nizam, willing or unwilling, in their grip.

Apart from the withdrawal of Indian troops the Stand Still agreement hardly worked and from January 1948 there began a long series of talks aimed at something more final and definite. From the Hyderabad side these talks soon

assumed the character of procrastinations. Inside, the Razakars further increased their numbers and Indo-Hyderabad feelings became further strained when it was found that the Nizam had transferred rupees twenty crores Government of India securities to Pakistan. Razakar terror inside the State mounted every dawn and dusk. In one of the volcanic speeches the Razakar leader declared 'with Koran in one hand and sword in the other, let us march forward, cut our enemies to pieces and establish Islamic supremacy'. In yet another he declared 'Hyderabad's flag will soon fly over Red Fort'. The Government of India's repeated requests to disband the Razakars and restore law and order inside the State were not heeded.

At this time the Nizam had at his disposal 25,000 troops under the command of General Ely Edroos, 35,000 police and unknown number of Razakars. They were not fully armed and in view of the blockade by the government frantic efforts were being made by the Nizam to find arms and ammunition for them from outside sources. For some time there was regular gun running between Karachi and Hyderabad. Intervention by Lord Mountbatten and his successor C. Rajagopalachari was of no avail. Activity of Sir Walter Monkton, the Nizam's legal adviser also produced no results.

By early July the Government of India had frozen over Rs. ninety crores of securities held by the Nizam in Indian banks, banned the export of gold and currency into the State, and refused to supply petrol to Deccan Airways.

On August 19, the Nizam's Government informed India that it had decided to take the dispute to U.N. In September Pt. Nehru announced that India had asked the Nizam for the last time to disband Razakars and repeated a demand for immediate facilities for the return of Indian troops to Secunderabad in such strength as is necessary to restore law and order. This demand, the Nizam described as 'out of question'.

Finally at 4 O'clock on September 13, the Indian Army units under the command of Lt. General Maharaj Rajender-sinhji entered the State of Hyderabad. The only purpose was to restore peace and order inside the State and a sense of security in the adjoining Indian territory. What the Nizam's government termed as Military invasion on the Indian side the interpretation was 'merely police action'. Pakistan's reaction to it was tempered by the fact that Mr. Jinnah had

died suddenly two days before.

The Indian troops met some resistance from the State forces and the Razakars but by the afternoon of September 17th, the affair was over. The Nizam capitulated, his government resigned and he announced his decision to withdraw the case from the U.N. where its legality was already being discussed. Razvi and other local fanatics were arrested. Major General J. N. Chaudhri was appointed the first Military Governor of Hyderabad.

In all about ten Indian soldiers were killed in action. The State forces officially lost 600, the Razakars, 1,200 and some more in the minor riots that still continued. Mir Laik Ali escaped to Pakistan after about a year's detention and Razvi with eight of his supporters and five former ministers was arraigned for trial by special tribunal in April 1950.

JUNAGADH

While Kashmir and Hyderabad took a different turn the Nawab of Junagadh shocked the Indian leaders and public by announcing his decision to accede to Pakistan.

Covering 3,337 square miles this State lay in the southernmost part of Kathiawar Peninsula which juts out into the Arabian sea between Bombay and Sind, and was separated from Pakistan by 400 miles. Surrounding it were about 45 States, some large and some very small, which had already acceded to India. Further, the territory of Junagadh did not consist of one piece. Parts of it were either contained or encircled by the lands of other States. The railway and posts and telegraph services were part of Indian system. Out of the total population of 671,000, 543,000 were non-Muslims.

The Government of India saw that their plans to consolidate the Dominion would be jeopardised and the security of the country weakened unless this accession which had been accepted by Pakistan was reversed. A suggestion to Pakistan that there should be a referendum in the state to decide the issue brought no response.

The Indian Troops arrived in Kathiawar on September 5 and virtually blockaded the State. Near the end of October the Nawab fled to Pakistan. After a period of deadlock India took control of the State on November 9th, having first occupied the small principedom of Manavadar which also acceded to Pakistan.

PEACE TIME ROLE

While the primary role of the Army, Navy and Air Force is the defence of India against external aggression, the three Services have always given prompt and willing assistance to the civil authorities not only in the maintenance of internal security but also in the alleviation of distress caused by natural calamities as well as in nation-building activities.

Services personnel have shown resourcefulness, enthusiasm and pride in the performance of extra-military duties allotted to them in aid of the civil power. To them all assignments, whether martial or civil are "operations" to be successfully completed within a given period of time. Discipline, determination and team-work have enabled servicemen to do difficult jobs in an amazingly short time, thus setting an example to the civilian population of what a determined effort against odds can achieve.

By virtue of its comparatively large size and wider distribution throughout the country, the Army naturally has been able to play a greater part than the other two Services in helping the civil authorities during emergencies. Our young and growing Air Force has also played an increasingly useful role in humanitarian service to the nation. Areas inaccessible by land or water have been visited by the "mercy" planes of the Indian Air Force which has brought hope and succour to people stranded in isolated pockets. The aid that the Navy can give to civil authorities is necessarily limited to coastal areas, and hence their smaller but none the less valuable contribution in this respect has to be viewed against the background of this limitation.

POST-PARTITION PERIOD

While yet the war was in its fifth year and while units of the Indian Army, Navy and Air Force were committed to various theatres the soldiers helped to clear locusts from the north western areas and restored communications after Kangra valley cloudburst. In the same year Bombay was rocked by an explosion in the docks. Several hundreds of houses were destroyed or damaged and several thousand

people were rendered homeless and panicky. Men of all services played a notable part, saving many lives in dangerous rescue work and salvaging huge quantities of material. This was the first time when soldiers while still serving under a foreign flag and considered hostile to national struggle for freedom showed that they had Indian hearts beating in the breasts and Indian blood flowing in their veins and given the conditions and opportunities would prove as zealous guardians of national interests as any other in the world.

The work done by the Army and the Air Force during the difficult days following partition is part of recent history. It is a tribute to the loyalty, high sense of duty and patriotism of the Armed Forces that many thousands of innocent men, women and children were saved from communal frenzy during the critical months of 1947. The colossal movement of millions of refugees between Pakistan and India would not have been possible without the aid of the Army and the Air Force. The Military Evacuation Organisation rescued helpless people from West Punjab, escorted long columns of refugees on the move by road and rail to safety.

The Army further came to the help of civil authorities in the reception, relief and rehabilitation of refugees; the largest refugee camp at Kurukshetra, a city of tents providing shelter to nearly a quarter million, was laid out and run by the Army.

JAMMU AND KASHMIR

For a full appreciation of the work done by the Army in Kashmir to ameliorate the condition of the people of the State, it has to be considered in two phases. Firstly, help given by our troops to civil population who had been the victims of the fury of tribal marauders. The latter had left behind them a trail of destruction, disease and suffering. The Indian Army, while continuing the fight against unprovoked aggression, did a great deal to alleviate distress. Medical aid was freely given and people were pulled out of dangerous areas.

It is, however, the second phase of the Army's work that will have more abiding results. Immediately after the cease-fire, Indian troops settled down to devise ways and

means to improve the living conditions in the countryside around them. Elementary schools were opened, facilities for medical aid were provided and roads were constructed to open up inaccessible areas to traffic and trade. Whenever there was any calamity e.g., floods, fires or epidemics, the Army promptly came to the help of the people.

ASSAM

Partition had left the State of Assam isolated from the rest of the country and the construction of a rail link to connect it with West Bengal was no mean task. The Army Engineers worked ceaselessly, ignoring the heavy monsoon, and built embankments and river bunds which made it possible for the vital 145-mile rail link to be constructed. They put in about 20,000 machine hours and the volume of work done by them measured up to 1,80,00,000 cubic feet.

When in 1950 a devastating earthquake rocked certain areas of Assam and in its wake came floods causing widespread wreck and ruin, the Army and the Air Force rose to the occasion and gave immediate help to the people. Planes of the Air Force flew 677 hours in sorties and dropped 400 tons of foodstuffs in the worst affected areas of North Lakhimpur, Dibrugarh and Sadiya. Paratroopers were dropped to rescue people from places which had been cut off by floods.

The Army helped by building roads and bridges which had been washed away, and also collected more than Rs. One lakh from amongst its personnel, through voluntary contributions, for the Prime Minister's Relief Fund. Again, during the floods of June 1951, food and essential supplies were supplied by the Air Force to the civilian population.

Since November 1952, some Engineer Units have been employed on the construction of fair-weather surface tracks in the North-East Frontier Agency.

BIHAR

In 1950 a series of calamities overtook Bihar. In some parts of the State famine seemed imminent unless supplies could be rushed. Swollen rivers made access to these difficult. The Army helped to avert the famine by carrying 8,000

maunds of foodgrains within three weeks even to the remote villages in this area.

In 1951 the Army, out of its own rations, contributed 10,000 maunds of rice and flour for flood relief, part of which went to Bihar. This, it may be mentioned, was only possible through a savings campaign in the use of rations by troops which was all voluntary. About 15,000 yards of tentage was also supplied by the Army to Bihar.

Earlier, in 1947, the Army helped in the preliminary work relating to the Damodar Valley Project.

WEST BENGAL

In Bengal too, the Army and the Air Force have helped the civil authority in flood relief and distribution of food in scarcity areas. In July 1952, Air Force Dakotas flew 1187 hours in eight days to supply food to the marooned people in flood-affected areas.

When unmanageably large stocks of imported foodgrains had accumulated in Calcutta docks, the Regional Director of Food, Calcutta, was given 62 military vehicles to transport these stocks to the godowns in Kossipore and Howrah.

MADRAS AND ANDHRA

In this area, "operation-Rayalaseema" stands foremost as an example of prompt and efficient handling of a difficult situation. There was acute water scarcity in Rayalaseema in April 1952 and if quick action had not been taken, it would have assumed the proportions of a calamity.

In about six weeks, Army units deepened 134 wells to produce a perennial water supply in the four districts of Cuddapah, Kurnool, Anantpur and Chittoor. Troops also organised water supply by setting up storage tanks, and distributed water in Army lorries over approximately 8,000 square miles of territory in the scarcity areas. They also established two water-points with an yield of 30,000 to 50,000 gallons of water per day.

The President of India expressed his appreciation of the "magnificent way" in which the Army had responded in this emergency.

Similar relief work was done by Army units in Coimbatore, Salem, Tiruchirapalli, Ramanathapuram and Madurai districts.

In June 1953, the Navy and the Air Force joined in a rescue operation at sea in which the lives of 200 fishermen were saved. The fishermen had got caught in a cyclone off the coast of Madras, and but for the help given by I.A.F. planes in spotting them, and by the Navy in bringing them to safety, many of them would have lost their lives.

BOMBAY

When the Transport Service struck work for three months in Bombay in 1952, the Army came forward to maintain essential supplies. During the strike in the docks, troops helped in the unloading of foodgrains. Other work done by the Army included the opening of a road which had been blocked for more than a week owing to a landslide near village Pophli in July 1953. This involved the demolition of rocks and removal of heavy boulders. In 1952, the Army made available to the Chief Engineer, Western Railway, vehicles for assisting in the construction of their storage godown. It also helped the Bombay Gas Factory by providing much needed labour.

HYDERABAD

The inhabitants of thirty villages which were in danger of being submerged as a result of the Tungabhadra water-spread at the end of May 1953 were evacuated to safer areas by the Army. Not only were transport and other facilities provided, but one hundred singleroom brick houses were also constructed for displaced persons, and suitable arrangements for water supply made.

The Army also helped in the distribution of foodgrains during a strike by the Hyderabad Taxi Union.

RAJASTHAN

A major problem that faces the Central as well as the Rajasthan Government is the alarming rate at which the Rajasthan desert is spreading. The only way to arrest the progress of the desert is afforestation of the area. At the request of the Rajasthan Government, the Indian Air Force

conducted in July 1953 a novel experiment of sowing seeds from the air and for this purpose made five separate flights. The results of this experiment have yet to be assessed; if successful, it may change the face of that desert land.

The troops also gave valuable help in the Rajasthan anti-locust operations in 1951-52.

UTTAR PRADESH

In 1949, Army Engineers were engaged for seven months in the construction of earth-work which formed part of the Lalitpur Dam Project. A year later, when thousands of people were expected to flock at Hardwar for the 'Kumbh' Mela, Army Engineers constructed bridges and huts and gave other help to the local administration.

In 1952, the Air Force was engaged in the Mirzapur District of U.P. in operations with which it had, by now, become familiar i.e., aid to victims of floods. I.A.F. planes made six sorties per day and dropped about 5,000 maunds of food supplies.

The most recent instance of assistance by the Armed Forces to the civil power is the help that is now being given by the Army to the U. P. Government in the organization of the Kumbha Mela at Allahabad. The work involved is very substantial including clearance of boggy grounds for use by pilgrims and the construction of temporary bridges for them to pass over.

DELHI

The Army helped in the anti-locust campaign in Delhi State in 1953. Nearly 2,000 trenches were dug and swarms of locusts were destroyed.

AJMER

By undertaking anti-dacoit operations in the Nasirabad area in 1952, the Army put the minds of the local people at ease and removed a terror that had been haunting them for some time. In addition, the troops gave appreciable help at different places in extinguishing fires, and clearing flooded towns.

PUNJAB

Apart from the valuable work done by the Army and the Air Force during the post-partition disturbances in the Punjab, the two Services have helped the people of this State on many other occasions. In 1951-52 extensive anti-locust operations were undertaken which involved the digging of 37,600 feet of trenches.

During the 1950 floods, the I.A.F. dropped food supplies to people who were marooned; in the same year, Army Engineers constructed a 'bund' at the river Ravi and helped in building the Bias railway bridge on the Mukerian-Pathankot rail link. The Army also completed an irrigation project by constructing a 'bund' and a weir in Ferozepore District.

PEPSU

In this State dacoits had been a constant menace to the people and some of them had got the better of the local police. Troops arrived on the scene on August 5, 1952 when the police were already engaged in an encounter with the dacoits. Using tanks, they combed the entire field and after killing two dacoits put the rest to flight.

GROW MORE FOOD CAMPAIGN & VANAMAHOTSAVA

When the country launched its "Grow More Food" campaign, the Jawans joined it with enthusiasm. Wherever possible, all available ground was tilled and food crops and vegetables sown, which helped to increase the nation's food supply. The area brought under cultivation in this manner is about 8,688 acres and the quantity of foodgrains produced per year approximately 16,800 tons.

Similarly, "Vanamahotsava" found the services equally responsive, and with characteristic efficiency Jawans set to the task of growing more trees. Every year at the beginning of rains all units and formations organise "Tree Plantation Week", when thousands of new trees are planted all over the country.

Latest instance of Armed Forces personnel activity in this respect is the relief operations by the Indian Air Force in flood stricken Assam.

In the Punjab and Pepsu where nearly ten thousand villages had been inundated, nearly one hundred thousand houses and cash crops well above rupees thirty-five crores worth had been destroyed, several thousand cattle and nearly two thousand humans had been washed away and are believed to have lost their lives. The personnel of the Indian Army Forces took up positions to do every thing possible to arrest further loss of human life and property and give as much relief and succour to the unfortunate victims as possible. General Shrinagesh the Chief of Army personally visited the affected areas and gave full support and assistance to the Chief Minister of the Punjab, Shri Bhimsen Sachar.

Sappers and miners of the Indian Army were also posted to reinforce the embankment of the eastern Jammuna Canal where rising waters of Jammuna threatened neighbouring colonies. The river which touched 674 feet above sea level at 5-30 A.M. on October 8, 1955, had flooded Jammuna Bazar and Bela Road and threatened the embankment in its dash towards Sharda, Gandhi Nagar, Krishan Nagar and other colonies. On October 8, itself reports stated that thirty five villages covering thirty five thousand acres were inundated by the rising waters of Jammuna.

The above being only preliminary reports and the flood waters being on their aggressive move it cannot be said what exactly will be the extent and magnitude of the disaster and sufferings but it can be safely said that as in the past so now the personnel of the Armed Forces will acquit themselves creditably.

In short, the Armed Forces have gone to the help of the people whenever and wherever possible, subject only to two considerations, firstly, that such work does not affect the quality of their training for their primary role which is the defence of India and secondly, that they do not incur any unwarranted expenditure from the public exchequer.

FIGHT FOR WORLD PEACE

On June 25, 1950, the Communist forces of North Korea, rolled southward across the 38th Parallel and invaded the Republic of Korea which had been established by free elections supervised by the United Nations. The so called 'little war' and an 'internal affairs of the Korea people' assumed mighty proportions and gravely threatened world peace. Within twenty four hours the U.N. Security Council passed a resolution calling for immediate cessation of hostilities, for the withdrawal of the Communist forces to the 38th Parallel and for all U. N. member nations to render every assistance 'in execution of that resolution.'

The Soviet Union, which had boycotted the U. N. for six months sent its delegation back to the Security Council on August 1, 1950. On that date it was Soviet's turn to preside over the Council. The Soviet delegate took advantage of the double position and reiterated the Communist line on Korea calling the Korean affair a 'civil war' a domestic affair which concerned only that country'. He attacked the fifty three nations that had supported the U. N. resolution as vassals of the U. S.

On September 6, 1950 the Security Council voted on a resolution calling on 'all states to refrain from assisting or encouraging the North Korea authorities (who had defied the U. N. Cease fire resolution) and to refrain from action which might lead to the spread of the Korea conflict to other areas. Soviet delegate was the only one to vote against it. This was the 44th Soviet veto.

India having agreed to the original resolution of the U. N. played a leading role in ending the hostilities and ensuring peace to that region and also to other regions by preventing the spread of the conflict to other areas. Pandit Nehru remarked. "Whatever solution is finally established, one thing comes necessarily first, and that is that the invading forces in Korea should go back whence they came. Then there might be a period during which somebody representing the United Nations could establish contact with the North Korea authorities and report to the Security Council." But inspite of all efforts the mass murder of the people in unfortunate land of Korea continued. Forces swung to and fro and places changed hands several times. It was the India view point that the original position of the two governments in Korea be restored and there should be peace on 38th Parallel. This was agreed to after bloody warfare and prolonged discussion inside and outside the U. N.

Although the hostilities ended the question of signing the armistice still remained.

INDIAN ARMED FORCES IN KOREA

With a view to providing a solution to the problem of Prisoners of War which held up the signing of the Armistice in Korea a resolution was introduced in November, 1952 by the Delegation of India at the Seventh Session of the General Assembly of the United Nations. The Indian resolution was adopted by the Assembly on 3rd December, 1952. However, the Government of the People's Republic of China and the U. S. S. R. rejected the resolution and the hopes of settlement at that time suffered a setback.

In May, 1953 the Armistice talks were resumed again. It was now to consider the eight point proposal put forward by the Command of the Korean People's Army and the Chinese People's Volunteers. These proposals, substantially

in line with the proposals contained in the Indian resolution were, after some negotiations, accepted by the United Nations Command and embodied in the Prisoners of War Agreement signed by both the Commands at Panmunjom on June 8, 1953.

The Prisoners of War Agreement set out the Membership and the Terms of Reference of Neutral Nations Repatriation Commission which was entrusted with the task of discharging certain functions in regard to those prisoners of war who had not been directly repatriated to their homelands. Under the Agreement the Government of India were asked to undertake certain special responsibilities. Besides being one of the Members of the 5 Nations Commission the Representative of India was designated as Chairman and Executive Agent of the Commission and also as Umpire in accordance with the Provisions of Article 132 of the Geneva Convention. The Armed Forces and other operating personnel required to assist the Commission for carrying out its functions were also to be provided exclusively by India. The Government of India considering the special responsibilities entrusted to it and having regard to the attitude of the Government of the Republic of Korea to the Armistice Agreement asked for certain assurances from both the Commands before assuming its obligations under the Agreement. The Government of India also sought assurance that the Indian Representative and the Armed Forces would be able to function honourably and under conditions in keeping with India's self respect and dignity. Further that the parties concerned would give their co-operation to the Commission and take steps to ensure that peaceful conditions would be maintained to facilitate the work of the Commission. On receipt of these assurances from the two Commands the Government of India acceded to the Prisoners of War Agreement which then became effective on July 27, 1953 when the Armistice Agreement was signed.

The Commission constituted itself on September 9, 1953. The work of the Commission was dealt with in two reports. The Interim Report adopted by a Majority of the Commission on December, 27, 1953 which dealt with the first phase of the Commission's activities upto the 23rd. December, 1953, the period of the assumption of custody of the prisoners of war and the conduct of explanations. The final report unanimously adopted by the Commission of February, 18, 1954, was concerned with the events subsequent to those included in the Interim Report. This report was not in substitution of the Interim Report but was a supplement to it.

Military history of the world is full of instances when the army of a country left its national shores on mission of conquest or aggression. It was, however for the first time that at the instance and initiative of a world organisation the forces of a country left the national shores to establish and ensure peace in a war ravaged region. The honour to India was distinct and responsibility on India's shoulders was great indeed. Pt. Nehru on the eve of the departure of the Indian Armed Forces to Korea said 'As a recognised neutral India has been asked to take over the Chairmanship of the N. N. R. C. and also to provide a custodian force. India has undertaken these responsibilities not in any spirit of officious interference in international disputes but because she felt that she was responding to a call for advancing the cause for peace. India has no misgivings about her task in Korea. India and Indian Army are honoured to undertake this task, particularly because the land of Korea today is surcharged with political hatreds and conflicting ideologies which are the very basis of Korea dispute. India and Indian Armed Forces will have to work with utmost patience, skill and understanding of human mind in that context.'

The Indian Armed Forces left their national soil with

the blessings of the teeming millions, the most anxious to see the world safe for freedom, democracy and peace. They left with the determination to live up to the motto 'For the honour of India.' The honour of being the Chairman of the N.N.R.C. fell on Lt. General K. S. Thimayya and that of being the Commandant of the Custodian Force on Major General P. S. P. Thorat the two officers who had already distinguished themselves in the 'Crusade in Kashmir' and who had fullest faith and confidence of the people and who could command absolute and most willing obedience of the men in their charge.

In the initial stages the Government of the Republic of Korea was hostile to the entry of the Indian Armed Forces into Korea. There were widespread anti-Indian demonstrations and at one stage the President of the Republic of Korea threatened to use force to prevent the entry of Indian troops there.

It is on record now that the Indian Armed Forces acquitted themselves with exemplary, courage and determination and did the job in a manner which none else could do. It goes to the credit of the Indian Armed Forces in Korea that their performance was greatly complimented by the President of Korean Republic and the Peresident of the United States. The 'Hind Nagar' the camping ground of the Indian Armed Forces in Korea had almost become a meeting ground for even the people of Korea and a fountain head of mutual love, affection, tolerance and understanding.

On return back to India Lt. General K. S. Thimayya was awarded Padma Vibhushan (Dusra Varg) and L. Naik Thakur Singh was awarded Asoka Chakra Class III for outstanding bravery in Korea.

MEMBER NATIONS OF THE COMMISSION

India Chairman, Lt. General K. S. Thimayya.

Czechoslovakia, Poland, Sweden and Switzerland.

Commander Custodian Force : Major General
P. S. P. Thorat.

The N.N.R.C., Commission was dissolved at midnight
on 21st February 1954.

L/Nk. Thakur Singh was awarded Asoka Chakra
Class III for outstanding bravery in Korea.



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MINISTRY OF DEFENCE

THE supreme command of the Armed Forces of the Republic is vested in the President. Administrative and operational control vests in the Armed Forces Headquarters under the overall supervision of the Ministry of Defence.

As a result of changes in the organisation and functions of the Ministry of Defence, since the attainment of freedom in August, 1947, the Ministry has become the central agency for obtaining policy decisions of the Government, and for transmitting those decisions to and progressing their implementation by the three Service Headquarters. This is a significant departure from the previous practice.

In consequence of the separation of the commands of the three services the ministry also has direct control of all inter-Services organisations such as the Ordnance Factories, the Organisation of the Armed Forces Medical Services, the Organisation of Scientific Adviser, the Historical Section, the Publication of Military Regulations and Forms, the National Cadets Corps, the National Defence Academy and the Armed Forces Information Office.

MACHINERY OF CO-ORDINATION

With a view to ensuring expeditious and efficient handling of these varied subjects a net work of committees is established at various levels. Within the Ministry the Defence Minister's Committee deals with the more important of inter-Services problems. It is composed of the Defence Minister, the Deputy Defence Ministers, the Defence Secretary, the three Service Chiefs and the Financial Adviser. The decisions of the committee are final and binding in the great majority of the cases. But where important policy issues are involved, the committee does not take final decision but

makes recommendations to the Defence Committee of the Cabinet presided over by the Prime Minister. For all practical purposes the Defence Committee of the Cabinet constitutes Government in so far as the Defence Ministry is concerned. Under this committee are organised a number of subsidiary committees which are competent to take final decisions on a number of subjects but which again submit policy issues and matters of importance to the Defence Ministers Committee. The more important are the Chiefs of Staff Committee, the Scientific Advisory Committee and the Medical Committee. The Secretary of the Ministry of Defence is the pivot of all its activities. He is assisted by a number of joint, deputy and under Secretaries. The Ministry is divided into a number of sections, each concerned with the work of a particular Service or Branch/Directorate of a Service. Parliament has appointed a Standing Committee from among its members whose function is to keep itself informed of all important developments in the Defence Ministry and to give advice whenever it is sought by the Ministry on all matters of importance. All legislative and financial proposals have, as a rule, to be placed before the Committee for approval.

MINISTRY OF FINANCE (DEFENCE)

To assist the Ministry of Defence and the Armed Forces in obtaining the sanction of the Ministry of Finance to the financial aspects of their proposals and to ensure ready financial advice on the spot there is a branch of the Ministry of Finance known as the Ministry of Finance (Defence). The Financial Adviser is the head of this section. Subject to the Finance Minister's Control the Financial Adviser has full authority to sanction any expenditure for the Armed Forces and is available for advice to the Defence Minister, the Defence Secretary, the Services Chiefs and other senior officers of Armed Forces Headquarters. Under him is a large organisation which is juxtaposed with the Armed Forces Headquarters at various levels. His duty also is to assist in the preparation of budget estimates of the Armed Forces and the 'Appropriation Report'.

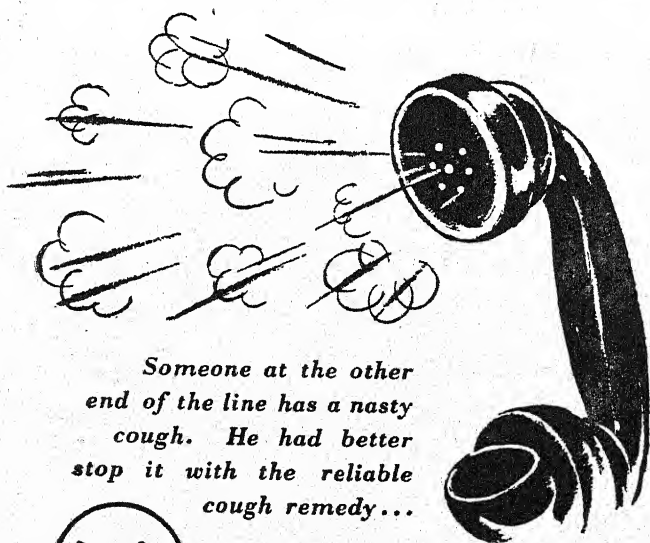
Under the Financial adviser is the Military Accountant General, whose organisation is responsible for making all payments, on behalf of the Armed Forces and Accounting

for such payments as well as for maintaining the pay accounts of officers and other ranks.

INTER-SERVICES ORGANISATIONS

The following Inter-Services Organisations are directly under the Ministry of Defence :—

1. National Cadet Corps. 2. Defence Science Organisation. 3. Psychological Research Organisation. 4. Directorate General of Ordnance Factories. 5. Armed Forces Information Office. 6. Combined Inter-Services Historical Section. 7. Indian Soldiers' sailors' and Air Men's Board. 8. Directorate General of Armed Forces Medical Services. 9. School of Foreign Languages. 10. Directorate of Military Lands and Cantonments. 11. Directorate of Military Regulations and Forms. 12. Joint Cipher Bureau. 13. Ministry of Defence Security Corps.



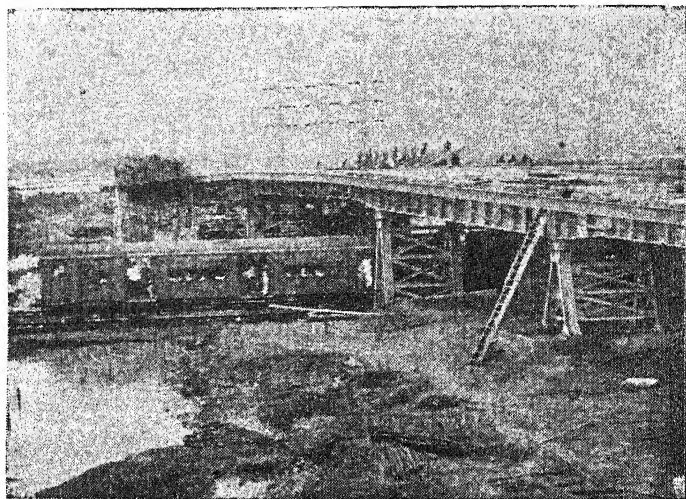
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ARMY

At the head of Army Headquarters is the Chief of Army Staff (the post of Commander-in-Chief having been abolished now.) The Army Headquarters is divided into various branches which are again sub-divided into Directorates.

GENERAL STAFF BRANCH

The Chief of General Staff is a Principal Staff Officer and holds the rank of a Major General. There are following directorates in the G. S. Branch.

Military Operations, Military Intelligence, Staff Duties, Military Training, Artillery, Signals, Territorial Army, Weapons and Equipment and Survey. The Directorate of Staff Duties is the major co-ordinating body in the Branch.

ADJUTANT GENERAL'S BRANCH

The Adjutant General is another Principal Staff Officer with the rank of a Major General. The A. G.'s Branch is divided into :—

1. **Directorate of Organisation** :— Controls expansion, mobilisation, demobilisation and recruitment. Actually all matters dealing with manpower fall within the scope and jurisdiction of this directorate.

2. **Directorate of Personal Services** :— Deals with pay, pensions, discipline, terms and conditions of services etc., . . in fact most of those subjects which touch upon the personal life of officers and other ranks in the Army.

3. **Directorate of Selection of Personnel** :— Deals with the recruitment of officers and other ranks. The Services Selection Boards and recruiting offices are under its control.

4. **Directorate of Medical Services :—** Under the Adjutant General but generally speaking independently, functions the Directorate of Medical Services. Till the middle of 1948 the D. M. S., used to be responsible for all policies relating to medical man power, medical stores, research, hospitals etc., required by all the three services. The D. M. S., is now responsible only for the administration of Army Medical Corps, Army Dental Corps and the Nursing Services and all matters relating to the health of the Army. The Director of Medical Services holds the rank of a Major General.

5. **The Judge Advocate General's Department :—** Assists the A. G., in matters affecting Military Law and International Law in its Military Aspects. The Judge Advocate holds the rank of a Brigadier.

QUARTERMASTER GENERAL'S BRANCH

The Q. M. G., is another principal staff officer who holds the rank of a Major General. Under him works the Directorate of movement and Quartering which controls all rail and sea movement both of personnel and stores within or outside the country. He is also responsible for the labour, canteen, fire and postal services of the Army.

Directorate of Supply and Transport:—

The Directorate of Supply and Transport is an important directorate working directly under the Q. M. G. This is responsible for the provision of rations, fodder, petrol and oil for the Army and for the general supervision of motor and animal transport throughout the Army.

Directorate of Remounts, Veterinary and Farms:—

The Directorate of Remounts, Veterinary and Farms is responsible for the provision of animals for the army, their veterinary care and running of military farms for the supply of dairy products for the Army.

Chief Technical Examiner of Works:—

The Chief Technical Examiner of Works is responsible for checking the paid works bills of the Military Engineering Service and the works at the site.

MASTER GENERAL OF THE ORDNANCE BRANCH

The M. G. O., is a principal officer holding the rank of a Major General. He is responsible for (a) the design, development, research and introduction of equipment, including clothing, general stores and vehicles into the army (b) the storage, care and preservation of technical equipment and (c) inspection, repairs maintenance of all types of equipment.

The Branch consists of the Directorates of Ordnance Services, Technical Development and Mechanical Engineering. Directors of Ordnance and Mechanical Engineering are heads of the Ordnance and Electrical and Mechanical Engineering Corps respectively. The Technical Development Establishments, Ordnance Depots and Electrical and Mechanical Workshops located throughout India and have each an allotted area or units and formations to look after.

ENGINEER-IN-CHIEF'S BRANCH

The Engineer-in-Chief is the head of the Branch. He is not a principal staff officer but he holds the rank of a Major General. He is the Technical Adviser on all Engineering Works to the three Services through the Quarter Master General, the Chief of Administration (Navy) and the Air Officer in Charge of Personnel and Organisation (Air Force). He is responsible for the technical training of all Engineer units and personnel and advises the Chief of General Staff on the engineering aspects of General Staff policy, planning and intelligence. He advises the Q. M. G., on the planning, operation and development of transportation agencies.

THE MILITARY SECRETARY'S BRANCH

The Military Secretary holds the rank of a Major General but is not a principal Staff Officer. The Branch handles all confidential reports of officers, maintains their personal records and provides secretariat for Selection Boards which judge the fitness of officers to hold higher ranks. It is also responsible for the grant of all types of Commissions, postings and transfers, promotions and retirements of officers and grant of honorary ranks. It also deals with all gallantry awards.

STATIC FORMATIONS

For purposes of command and administration in peace India is divided into three static commands each under a General Officer Commanding-in-Chief with the rank of Lieutenant General.

The G. O. C.-in-Chief is responsible for all troops located in that area and placed under his command. Operational troops which are located in that area are called "Lodger" formations and Command Headquarters are responsible for their maintenance during their stay. These commands are :—

Southern Command :— This consists of the States of Madhya Pradesh, Bombay, Madras and Hyderabad.

Eastern Command :— This consists of the States of Uttar Pradesh, Bihar, West Bengal, Orissa and Assam.

Western Command :— This consists of the States of Jammu and Kashmir, Punjab, Delhi and the Union of Rajasthan.

The static commands are further subdivided into areas and sub-areas. An Area is under the command of a Major General, Sub-Area under the command of a Brigadier and Station under the command of a Col. or a Lt. Col.

FIELD FORMATIONS

The command of the forces in the field is vested in the General Officer Commanding-in-Chief. His authority in respect of formations under his command is supreme in all matters except that approval must be obtained from the superior formation headquarters in the matters of staff appointment changes in organisation and the scale of rations.

The General Officer-Commanding-in-Chief is responsible for the efficient maintenance of the forces in the field, for the control and direction of their operations as a whole and for the military government of all territory under Martial Law.

The highest field formation is the Army/Army Group which may have three or more corps in addition to a number of Armoured Divisions and Air Force detachments under command/in support. It is normally commanded by a Lt. General.

A Corps is normally composed of three divisions and is commanded by a Lt. General.

INFANTRY DIVISION .. is normally composed of three infantry brigades, one Light Armoured Regiment, one Machine Gun Battalion in addition to other supporting arms and services. It is commanded by a Major General. The supporting arms are Armour, Artillery, Engineers, Signals, Service Corps, Medical Corps, Ordnance and Electrical and Mechanical Engineers. According to its role, it may have an armoured brigade or para brigade in support/under command.

A Divisional Commander can bring into action about ten Infantry Battalions, five artillery regiments, a machine gun battalion (48 medium machine-guns) a Light Armoured Regiment having light tanks and/or armoured cars. In support of these troops he has three field companies of sappers and miners, one Field Park Company, three Workshops Sections, three Field Ambulance Units, four Transport Companies and four composite platoons .

The weapons that an Infantry Divisional Commander can bring to bear are roughly as follows :..

LIGHT—Machine guns, Sten guns, Medium Machine guns (Vickers), 25 pounder guns, 6 pounder Anti Tank Guns, Light Anti Aircraft Guns, Armoured Cars or Light Tanks (both of which fire machine guns) 3" mortars and 2" mortars.

An Infantry Division may normally have additional artillery support provided from Corps or Army Artillery consisting of :—

Mountain Artillery 3'7" Howitzer Guns, Medium artillery 5'5" guns, Artillery Survey Units and Air Observation Post Flights.

ARMoured DIVISION is composed of one Armoured Brigade, one Infantry Brigade (lorried) one Armoured Regiment and other supporting arms and services. An Armoured Brigade consists of three Armoured Regiments and one Infantry Battalion (motorised). All the guns in an Armoured Division are mounted (S.P.)

Certain independent armoured brigades are also formed as army troops with their chief role to provide close support for an infantry division consisting of Three Armoured Regiments, one Field Regiment Artillery, one Assault Field Company Engineers, one Armoured Brigade Signal Company. In addition to this there are other arms and services in the Brigade.

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FIGHTING TROOPS

THE ARMoured CORPS

The Armoured forces provide a commander in the field with a very powerful weapon and striking force with which to force a decision in attack or to regain the initiative in defence. To these ends armoured units are provided in attack or defence in support of the infantry or, in attack, as the main attacking arm. In the latter case, armour always requires the support of artillery, infantry and engineers.

An Armoured Corps is organised on a divisional basis. An Armoured Division is designed to destroy the enemy in fast moving fluid operations. Its main tasks are :—

(a) Maintenance of the momentum of the attack on a main enemy defensive area, which has been wholly or partially broken into by other formations (b) The break through followed by the pursuit of an enemy force covered by rear guards (c) The seizure and exploitation of a limited bridge-head over an obstacle during mobile operations (d) Temporary defence. The division is commanded by a Major General.

The Armoured Corps is composed of two types of regiments :—

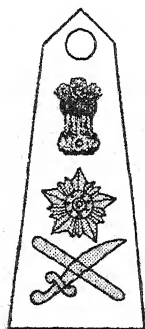
(a) Armoured Regiments which are equipped with medium tanks (b) Light Armoured Regiments which are equipped with light tanks and Armoured cars.

The smallest fighting unit in the Armoured Corps is a troop which has three tanks or armoured fighting vehicles. An Armoured Regiment has four such Troops in a squadron, while a Light Armoured Regiment has only three armoured vehicle troops in a squadron. A regiment has three squadrons. An armoured regiment has forty eight tanks, while a light armoured regiment has only 35 AFVs.

REGIMENT OF ARTILLERY

Artillery is a supporting arm and its role is to dominate the battlefield with fire, in order to assist the supported arms i.e., infantry and armour to achieve their object. Against

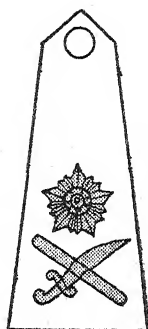
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GENERAL



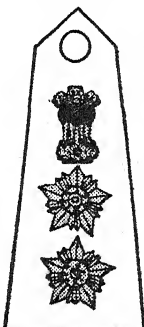
LT. GENERAL



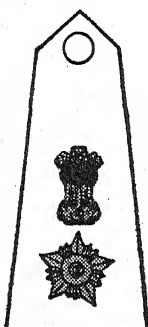
MAJ. GENERAL



BRIGADIER



COLONEL



LT. COLONEL



MAJOR



CAPTAIN



LIEUTENANT

2ND.
LIEUTENANT

air and sea targets, artillery works in conjunction with the air and naval forces.

The Director of Artillery at Army Headquarters, who holds the rank of a Brigadier, is the head of the regiment and is responsible to the Chief of the General Staff for its efficient running. On the staff headquarters a Brigadier Artillery is provided.

Field formations are also provided with artillery staff. A Commander Corps Artillery (Brigadier) is on the staff of the Corps while a Division has a Brigadier as Commander Division Artillery. Artillery Units consist of:—

(a) Field and anti tank units consisting of medium regiments equipped with 5.5 in guns, Field regiments equipped with 25 pounder guns, self propelled 25 pounder (sextone) 3'7 in. Howitzers, Anti-Tank regiments equipped with 6 pounder guns and self propelled 17 pounder guns, Air Observation Post flights, which are air force units manned by trained artillery pilots and Survey Regiments.

(b) Anti-Aircraft Regiments consisting of heavy anti-aircraft Regiments equipped with 3'7 in. A. A., and light anti-aircraft regiments with 40 mm., Bofors.

(c) Coastal Artillery consisting of coastal guns 6 in. 6 pounder twins or 3'7 in. A. A.

Artillery is organised on Divisional and Army Group basis. Divisional Artillery consists of three Field Regiments, one Light Anti-Aircraft Regiment, and one Anti-Tank Regiment. In order to supplement the fire of Divisional Artillery an Army Headquarter reserve of artillery is maintained.

Static artillery mostly consist of Anti-Aircraft and Coastal defence units. These units are organised for the defences of certain vulnerable areas and ports.

The operational functions of the Artillery units are :—

Field, Heavy and Mountain Regiments :— The task is to support the other arms by concentrations and barrages of high explosives and to destroy the enemy concentration, prepare positions, machine gun nests and anti-tank guns. These three types of regiments have the same basic organisation and although they employ different types of guns

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they function in more or less similar ways. The field and heavy regiments are fully mechanised and they have high degree of mobility.

Heavy Anti-Air Craft Regiments :— These regiments are employed in two roles, the Static in which they form part of a permanent defence and in Mobile in which they support other arms in the field. In Mobile Units guns and instruments have to be handled in much the same conditions as in Field Artillery, although greater technical knowledge is required.

Light Anti-Aircraft Regiments :— These highly mobile regiments perform the task of combating all forms of low flying air attacks. They protect troops on the march and attack enemy aircraft at extremely close range, thus deflecting them from their objective. They defend their own men by destroying the enemy aircraft. Their most important quality is rapid movement.

Anti-Tank Regiments :— The duty of these regiments is the destruction of enemy tanks. These regiments are highly mobile and move their guns from position to position as the battle demands. Each gun detachment is so equipped as to be able to fight on its own.

Anti Aircraft/Anti Tank Regiments :— These regiments are a combination of 2 anti-tank batteries each containing three troops of four guns and two light anti-aircraft batteries each containing nine troops of six guns. This grouping has been adopted for purely operational reasons.

Coastal Regiments :— These are mostly static units which had little part to play during the last war, except in such places as Malta and Gibraltar. They are the watch dogs along the coast line whose main function is to repel and break seaborne attacks. In certain cases they act as subsidiary anti-aircraft defence. Their equipment varies according to the probable liability of the coastal station and the command varies according to equipment.

Survey Regiments :— provide field and medium artillery with information about enemy artillery. There are three main components in these regiments.

1. Survey which consists in the determination of the gun positions, observation posts and targets in relation to one another or in relation to the map in use. 2. Flash

spotting which consists in the determining of the position of enemy batteries by observing the flash of their guns when fired 3. Sound ranging, which consists in ascertaining the position of enemy batteries by means of the sound of their guns when fired.

When warfare is mobile, there is not very much for the survey regiments to do, but when the main enemy defences are reached and the battle stabilises the role of the survey regiments becomes highly important.

CORPS OF ENGINEERS

The object of the military Engineers is to 'apply engineering skill and resources to the furtherance of the Commander's plan'. Engineers are a specialised arm and are employed independently or in support of other arms to accomplish such tasks as require engineering skill.

They are responsible for adopting new inventions to military purposes, experiment with them and pass them on to other arms and services. Further development of invention is also carried out under their auspices. Engineers who are generally called 'Sappers' are an integral part of any force operating in the field. To fulfil their role successfully, engineers need many widely differing types of units and a very flexible organisation.

The tasks that the engineers perform are separated under two headings in war and in peace.

In War

(a) Communications :— Construction, maintenance and operation of the requisites for the movement of troops and stores (excluding the operation of road and air transport) with Forward Troops, on the lines of Communications and in the Rear Areas.

(b) Fortifications :— The construction of works affording protection from the enemy's weapons or constituting obstacles to him and limited to those tasks that cannot be performed by other arms for their own protection.

(c) Demolitions :— The demolition of enemy emplacements, bridges, roads and railways behind the enemy lines to hamper the forward flow of his reinforcements and stores or to delay pursuit in case of withdrawal.

(d) Installations :— The construction, repair, operation and maintenance of installations such as electric power houses, saw mills or pipe lines, mainly on the line of communications.

(e) Accommodation :—The construction of all types of camps, Nissen huts and barracks with Forward Troops, on the lines of communications and in the rear areas. The scope of this work depends upon the area where it is required.

(f) Water Supply :— The provision and purification of water is an Engineer's responsibility. In forward areas it is limited to pumping with mobile pumps from existing wells and streams, chlorinating and purifying with mobile plant. In the rear areas the Engineers bore wells, lay pipe lines and construct purification plants.

(g) Map Making :— Engineers are responsible for the making, production, reproduction and issue of all types of maps for a theatre of operations.

The Engineers are organised for two main functions.... war and peace. In the former role the Engineers field formations are employed with other arms while in the latter role they are more or less static, have a civilian nucleus of officers and men and are employed in rear areas. The Engineer Field Units are usually classified as (a) Close Support Engineers (b) Line of Communication Engineers (c) Transport Units (d) Survey Units.

Though the Engineers are trained to fight as infantry, they are best employed in the furtherance of any operational plan; on those tasks for which they have been specially trained. Engineers carry a good deal heavy equipment to replace manpower and working parties must therefore be protected adequately. All engineer works require time for planning designing, collection of resources and execution. As a result Engineer works lack flexibility. Sudden changes in the Commander's plan seriously delay the completion of any essential Engineer work.

In field formation, the corps assumes its proper role in looking after all the Engineer tasks in that area. The Commander Divisional Engineers (Lt. Col.), at Divisional Headquarters is the technical adviser to the Divisional Commander on Engineer problems. He is responsible for making recommendations on Engineer aspect of divisional

Commanders' plan, needed for the implementation of the plan. He also commands all divisional engineer units. In an Infantry Division, the Engineers consist of three Field Companies and one Field Part Company.

In Peace

In peace conditions, Engineer activity is mainly confined to two channels .. regimental and military Engineering Services. Their role in peace is to plan, construct and maintain accommodation and auxiliary services for troops. They also plan and construct defences when required. They are also Engineer construction agency for all works connected with the Air Force and Navy.

CORPS OF SIGNALS

The Corps of Signals is responsible for Army Signal communications down to the Headquarters of Infantry Battalions, Artillery Regimental Headquarters and units of other Army Service. It also maintains lines of communication for and within the Air Force Formations, as also communications required to link army formations with such Air Force Formations and units as may be working in support of the Army. For the provision of lines of communication for the Air Force specialist Army signal staff units known as Air Formation Signals are formed. Armoured, Artillery, Engineer, Infantry and Corps of Military Police units provide their own channels of signal communications below battalion, regimental or equivalent headquarter level. For these internal communications in their own units the arms concerned provide their own signalling personnel. The Corps of Signal has developed into a potent arm. By its provision of communications, various commanders and staff are enabled to exercise command and control and remain in the day to day picture of future developments and plans. The modern army without the resources of efficient signal channels will find it difficult, if not impossible, to function as an integrated force, particularly in these days when mobility is dominating factor in warfare.

FUNCTIONS—The function of Signals in the Army are
(a) Intercommunication which means control and administration of the different and often widely separated parts of command
(b) Interception which means mainly the

interception of enemy wireless transmissions. These, on examination by intelligence personnel may reveal information regarding the enemy's strength, disposition and intentions (c) Counter intelligence; this attempts to deceive the enemy's signal interception system by means of wireless silence, false transmission and control of abnormal variations in wireless traffic preceding an operation.

REQUIREMENTS — The essential requirements of an efficient signal intercommunication system are :—

(a) Reliability :— No one method of intercommunication alone is reliable as each has its advantages and disadvantages. A judicious co-ordination of all methods is therefore essential to obtain reliability in varying situations.

(b) Speed :— The system is of NO use unless the intelligence transmitted through its medium arrives in time to be of value.

(c) Simplicity :— Complex system of communications, although suitable for static layouts, are liable to break down under the strain of mobile operations. This has, therefore, to be as simple as compatible with the requirements of speed, security and reliability.

(d) Flexibility :— The system must be such that new demands occasioned by changes in the situation can be met quickly and without confusion.

(e) Security :— The system must include means of inter communication which the enemy cannot intercept.

(f) Economy :— In war, the resources of trained technical personnel for operating and maintenance of the system and the resources of technical equipment, will of necessity be subject to serious limitations. The system therefore, must be economical in manpower and equipment.

Methods :— The means of intercommunication in the field are usually (a) Line Telegraphy and Telephony (b) Wireless telegraphy and Radio Telephony (c) Visual Telegraphy (d) Message Carrying.

Organisation

In the main there are two types of Signal Units. They are (a) Static Signal Units which are responsible for

the provision of signal communications along the static chain of formation headquarters such as command, area and sub-area. These units are affiliated to the relevant formation headquarters which they serve (b) Field Signal Units are located at and affiliated to the relevant field formations are responsible for providing signal communications required for operational and administrative command and control in the field.

There is a Director of Signals at Army Headquarters who is also designated as the Signal Officer-in-Chief and in latter capacity, is the executive head for the provision and efficiency of static signal communications in particular. Signal Staffs are provided at each command Headquarters consisting of Chief Signal Officers, each holding the rank of a Brigadier. Chief Signal Officers are also provided at Field Formations Headquarters of Corps and above.

INFANTRY

Infantry forms an integral part of all fighting troops and has been rightly termed as the 'Queen of the battlefield'. In operations it forms part of a division, in the form of infantry battalions, while in lines of communication it functions in the role of defence troops in mobile columns, garrisons and posts. Infantry is composed of various groups known as regiments.

Every regiment has a regimental centre, which serves the infantry battalions in matters of supply of recruits and maintaining of records of men, besides serving as a depot when the unit moves out on active service. It also looks after the interests of the regiment as a whole.

The smallest unit of the infantry is a section composed of one Naik (commander) and ten men. There are three sections in a platoon whose commander is a Junior Commissioned Officer : Jemadar/Subedar. There are three platoons in an infantry company.

An infantry battalion consists of four infantry companies, one headquarter company and one administrative company. The Headquarter company consists of signals, mortar, pioneer and battalion headquarters platoons. The administrative company consists of the quartermaster, transport and medical platoons.

The battalion is commanded by a Lt. Col. and has a complement of twelve officers and twenty four Junior Commissioned Officers. A Regimental Medical Officer is also attached to a battalion to advise the commanding officer in all medical matters. The commanding officer has a Major as second-in-command and an Adjutant and quartermaster as his staff officers. The Subedar Major who is the senior most Junior Commissioned officer in the battalion also forms a part of the battalion headquarters. Other important Junior staff appointments are those of the Jemadar Adjutant, Jemadar Quartermaster, Battalion Havildar Major and Battalion Quartermaster Havildar.

An infantry battalion when working as para battalion is trained and equipped specially for that role. It can also be a machine gun, reconnaissance or a motor battalion.

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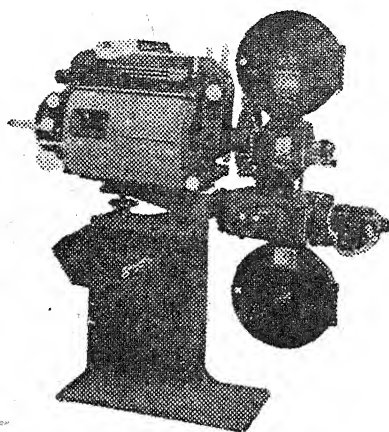
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ARMY SERVICE CORPS

The Army Service Corps is the largest and the most important service. It is responsible for the provisioning, maintaining, transporting and distribution of rations, petrol, oil and lubricants to meet all the requirements of the Armed Forces of the country in peace or war. The Corps is under the overall control of the Quartermaster General at Army Headquarters. It is administered directly by the Director of Supplies and Transport at Army Headquarters, who holds the rank of a Major General and is responsible to the Quartermaster General for its efficient working. In the Command Headquarters the Corps is represented by a Brigadier. Area Headquarters have a Commander Army Service Corps who commands all units of ASC in that area. Field formations also have ASC officers on their staff. The Corps comprises of three main branches :—

(a) Supplies :— The term 'Supplies' includes dry and fresh rations, forage, fuel, illuminants, hygiene chemical and hospital comforts. They fall into four main categories of purchase i.e., (a) Central Purchase Articles :— Purchased centrally and delivered by the Central Procurement Department or Food Department in accordance with the demands placed on them by Army Headquarters atta, rice, sugar and certain hygiene chemicals, and imported articles obtained through government agencies in foreign countries i.e., tinned foodstuffs. (b) Local Contract Articles supplied by the local contractors include fresh fruits and vegetables. (c) Local Purchase Articles are made (1) at the order of the Director of Contracts to meet a temporary or expected shortage in centrally purchased articles (2) in an emergency (3) Spasmodic demands of authorised ASC articles for which neither central nor local contracts exist (4) purchase for troops on the line of march, camps etc. (5) small demands for which requirements from the normal sources of supply may be uneconomical (d) Bread, Meat and Fodder.

(b) Transport :— All transport in the Army is either first-line or A. S. C. transport. The former is an integral part of the unit establishment and the latter is operated by the A. S. C., whose responsibilities are (a) to supply and maintain the unit or formation served and to carry a second line reserve of essential commodities for that unit or formation (b) to provide a pool of transport for additional requirements (c) to provide transport of a specialised nature e., g., bridging company vehicles, tank transporters, ambulance cars etc.

(c) Petrol and lubricants :— consisting of (1) Aviation spirit (2) Motor Spirit (3) Diesel and Fuel Oils (4) Kerosene (5) Aero and motor lubricants (6) Greases and (7) Miscellaneous like fog oil, flame thrower fuel in the main categories.

The supply of rations and petrol etc., is done by supply depots. They are (a) Reserve|Advance Base Supply|Petrol Depots :— These are controlled directly by the Army Headquarters and are responsible for the supply of rations, petrol, oils and lubricants under orders from the Army Headquarters.

(b) Supply|Petrol Depots :— Control over these depots is exercised by the Commander Army Service Corps at the Area Headquarters. The depots are responsible for the supplies to units dependent on them. Issue of supplies on payment to entire personnel is made through the retail shops.

Army Ordnance Corps is a vast supply organisation stretching from the base to the front line. The A. O. C., is responsible (1) to ensure that all units are equipped according to the scales laid down for them (2) Provision, receipt, storage and issue of all Ordnance stores (3) Accounting for all ordnance stores (4) Minor repairs of all ordnance stores, less technical which need not be sent to workshops (5) Replacement of all Ordnance stores when they have been rendered unserviceable or lost in action (6) supply of spare parts to keep all warlike stores in use (7) Operation of laundry, bath and Cinema units (8) manufacture of industrial and inert gases (9) organisation for collection on salvage.

Ordnance Stores :— Ordnance stores are all items of armament and equipment except those of supplies, fodder and P. O. L., and specialised items supplied by other services.

A complete range exceeds 5,000,000. They, however, fall into following categories :—

- (a) Clothing and necessities.
- (b) General Stores :— consist of accommodation stores, accountrements and technical instruments, tools, fire fighting equipment, anti-gas stores, timber, oils, paints etc.
- (c) Warlike Stores :— They are all types of weapons, ammunition, vehicles, armament, engineer, signal and artillery equipment, radar, optical instruments, workshop machinery etc.

Functions of provision, receipt and issue of stores are performed by the different Ordnance Depots. These are :—

Central Ordnance Depots :— They are responsible for the provision, bulk stocking and issue of stores to Ordnance Depots.

Ordnance Depots :— They are responsible for receiving stores in bulk from the Central Ordnance Depots and the retail issue of the same to units in their areas of supply.

Holding Depots :— These merely hold stores in bulk on behalf of the Central Ordnance Depots and issue them in bulk to Ordnance Depots.

Transit Depots :— They are located in ports and are responsible for the receipt and despatch to overseas and inland Central Ordnance Depots or Ordnance stores, ammunition and vehicles.

WAR INSTALLATIONS

The ordnance installations in war are so organised and stocked that they are able to supply quickly the requirements of the forward units For the conduct of any operations on a large scale, it is generally necessary to establish a base which would maintain all units in that area. The backbone of the A. O. C., stores organisation in the field is the static installations of stored depots at the base from which constant replenishment of advance depots, Ordnance Field and forward dumps is arranged. The main base installations may be in the theatre of war itself or in the main base country, separated from the

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theatre of active operations by a sea voyage. Main field Ordnance Installations are :— (1) Base Ordnance Depot. In case the force consists of less than six divisions an advance Base Ordnance Depot is established. This is generally phased into the theatre during the early stages of the campaign as an advance element of the B. O. D., or to act as an advance projection if the line of communications is over stretched or to be a forward depot when there is no B. O. D., and the force is maintained directly from the main installation in the country (2) Base Ammunition Depot which consists of a Headquarters and three ammunition platoons which can be raised to five with a total capacity of 50,000 tons. (3) Corps Ordnance Field Park :— is provided to each corps, division or an independent brigade. It holds and carries 'stocks on wheels' for thirty days requirements of such essential items as are frequently required by units including stores for first echelon unit repairs and for maintenance of unit war equipment. (4) Divisional Ordnance Field Parks :— are parts of the basic divisional troops and are cited in the divisional administrative area. These only serve the units in the formation and are controlled by the C.A.O.C. They do not supply requirements of E.M.E., workshops and A. S. C., workshop platoons. (5) Ordnance Field Depots :— are L. of C. units are controlled by D. D. O. S., of the formation of location. They hold thirty days requirements for one or two divisions of selected limited range of fast moving items of all types of stores. (6) Ordnance Vehicle Parks with base and advance depot are responsible for supplying forward units with vehicles. They also receive back in the Returned Vehicle Parks such used vehicles as cannot stand the strain of operational conditions from forward units and re-issues them to static units (7) Returned Stores Depots :— These are sub-depots and receive repairable ordnance items from forward units, conditions them if necessary and re-issues them to their stock groups. Unserviceable stocks are sent to salvage section for back loading to base. (8) Salvage units (9) Mobile Laundry and Bath Unit :— is provided one per division and has a headquarter, a laundry section and bath section (10) A. O. C., Stores Sections attached to E. M. E., Workshops (11) Mobile Ammunition Repair Unit are formed as required to deal with repairs in the forward areas and to capture enemy ammunition dumps (12) Ordnance Officers'

Shops are allotted under A. H. Q., order and are usually allotted to Corps Divisions, hold stocks of authorized items of officers and nursing sister's kit and provide them on payment in forward areas. These shops are usually not mobile. (13) Mobile Industrial Gas Unit is essentially an Army Corps unit and provides limited stocks of the gases necessary to meet immediate requirements (14) Kinema Units consist of a headquarters and two sections to be allotted to a division under corps orders and provide all kinema facilities to the formation. Each section consists of two mobile kinema lorries mounted with two 35 MM. projectors.

The Master General of Ordnance at Army Headquarters is responsible to the Chief of Army Staff for efficient running of the Ordnance Services. He is assisted by the Director of Ordnance Services who holds the rank of a Brigadier. Ordnance staffs are also provided at each command. Lower formations up to sub-Areas also have Ordnance Officers on their staffs. While assisting the various commanders on all Ordnance problems, they advise and assist the units in the supply, accounting, care and preservation, conditioning and return to Ordnance Depots of surplus reparable or unserviceable arms, ammunition, vehicles and stores of Ordnance Supply.

CORPS OF ELECTRICAL AND MECHANICAL ENGINEERS

The Corps is responsible for the repair and inspection of all mechanical, electrical, and optical equipment in the Army and such items of equipment of the Navy and Air Force (when they are serving with the Army) which are common to the three services. In addition the following special commitments are also the responsibility of Corps :—

- (a) The inspection and repair of all medical, optical and surgical appliances and the manufacture and fitting of artificial limbs and allied equipments
- (b) Inspection and repair of cinema projection and petrol handling equipment
- (c) Recovery of all mobile equipment for which the corps is responsible for repair.

The range of equipment looked after by the Corps includes among other things, tanks, wheeled vehicles, artillery, small arms, machine guns, fire control instruments such as predictors height and range finders, telecommunication and

wireless equipment, teleprinters, watches, anti-aircraft, searchlights and coast defence equipment.

The Corps carries out its functions of repair and recovery in four echelons.

PEACE

1st Echelon :— Dependent on the number of vehicles and other equipment held on charge by units, provision is made for the attachment of the Electrical and Mechanical Engineer Personnel to Unit Repair Organisations.

2nd Echelon :—Station Workshops carry out repairs to 'B' vehicles (soft vehicles as opposed to hard vehicles which are tanks and armoured cars) and certain workshops have components for the repair of armaments, small arms, instruments, wireless and refrigeration equipment. Combined workshops also carry out 2nd echelon repair of vehicles and all echelon repair to certain other equipment e. g., Coastal Defence. These workshops carry out 1st. Echelon repairs of units, which have too little equipment to justify a Unit Repair Organisation.

3rd Echelon :— No separate 3rd Echelon workshops are maintained because 3rd echelon work is primarily an overflow from 2nd echelon workshops.

4th Echelon :— Army/Command Workshops.

IN THE FIELD

1st Echelon :— The Light Aid Detachment is a highly mobile unit attached to all major mechanised units. It is equipped to carry out light repairs and replacements in the field and effect light recovery from forward areas.

2nd Echelon :— Mobile workshops, including machinery equipped heavy lorries with recovery facilities, effect heavy replacements by an exchange of assemblies and carry out the repairs which its machinery can handle in a short time and still allow it to keep pace with the Division or the Brigade to which it is attached. Every Infantry or Armoured Brigade has one 2nd Echelon Workshop attached to it.

3rd Echelon :— Semi mobile workshops which carry out repairs that have overflowed from the 2nd echelon workshops through heavy casualties.

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4th Echelon :— Static Base Workshops equipped with modern machine tools and accessories are capable for complete overhaul of vehicles and repair assemblies covering any and every type of equipment. Included in this echelon are also Army Command workshops situated in various parts of the country. Army workshops come directly under the control of A. H. Q. Some of the items of equipment which are catered for in the 4th echelon workshops are armoured fighting vehicles and soft vehicles, motor cycles, armaments, electrical equipment, telecom equipment, fire control and optical instruments.

At Army Headquarters the Director of Mechanical Engineering, who holds the rank of a Brigadier is the head of the Corps and is directly responsible to the Master General of the Ordnance for the efficient running of the Corps. At each Command Headquarters is a Brigadier EME who is in turn responsible to the Director of Mechanical Engineering for all matters pertaining to the Corps within his particular command. Working directly under the Brigadier EME is the Assistant Director of Mechanical Engineering (Lt. Col.) in each Area.

In field formations provision is made for a Deputy Director of Mechanical Engineering (Brigadier) at Army Operational Command, a Deputy Director of Mechanical Engineering (Col.) at Corps Headquarters and a Commander Electrical and Mechanical Engineers (Lt. Col.), at Division Headquarters.

ARMED FORCES MEDICAL SERVICES

The main functions of the Medical Services of the Army are (a) Prevention of diseases and preservation of health of troops (b) Care and treatment of sick and wounded (c) Advise on all matters, particularly (i) prevention of diseases (ii) sanitary measure (iii) selection of sites for location of troops (d) Command, administration and training of medical units and personnel (e) Provision and replenishment of medical stores.

The Army Medical Services comprise of (a) Army Medical Corps (A.M.C.) Military Nursing Service (M.N.S.) and Army Dental Corps (A.D. Corps).

The head of the Armed Forces Medical Services is the Director General who holds the rank of a Lt. General and

exercises overall control of the medical services of the Army, Navy and Air Force. He is (a) Adviser to the Ministry of Defence on all Armed Forces Medical Matters and is directly responsible to the Ministry of Defence for overall Medical policy matters of the Armed Forces (b) Responsible for co-ordinating and efficient direction of all the three Medical services (c) Provision, storing, issuing and developing of Medical equipment (d) Planning and direction of research and development in all subjects of Service Medicine. (e) Recruitment, training and supply of Medical Officers for the three services of the Armed Forces (f) The Provision of Dental Services to the Armed Forces (g) The Provision of Nursing Services to the Armed Forces (h) The operation and administration of Medical units not placed under the control of the three fighting services (i) Inter-service attachments of Medical Officers.

The Army, Navy and Air Force has each a Director as the head of its Medical Services. The Director of each Service is responsible for (a) Control of Medical services in accordance with the policy of the Chief of Staff (b) Giving technical advice to the Chief of Staff concerning all matters affecting the health of the troops. In that capacity he has direct approach to the Chief of Staff. (c) Medical planning (d) Distribution and administration of Medical personnel (e) Administration of Medical units (f) Preparation of vital statistics relating to that service.

Military hospitals are located at cantonments on the required bed strength, depending on the strength of the troops located there. The hospitals cater for officers, their families, Junior Commissioned officers and other ranks and their families. In addition to general hospitals there are some specialist hospitals dealing with special types of diseases. The Armed Forces Medical Services have arrangements for such specialised subjects as surgery, venerology, dermatology, pathology, ophthalmology, anaesthesia, psychiatry, ear, nose and throat, gynaecology, radiology, orthopaedics, transfusion and resuscitation.

Hygiene Organisations

Units :— Unit sanitary and anti-malaria squads, Unit Anti Malaria officer (Regimental) acts as adviser to the Officer Commanding.

Stations—Station Hygiene Organisation. Full time Medical officers-in-charge of large stations, part time in others.

Area H. Q. :— Deputy Assistant Director of Hygiene adviser to A. D. M. S., who in turn is adviser to Area Commander.

Command H. Q. Assistant Director of Hygiene adviser to the D. D. M. S., who in turn is adviser to the G. O. C., — in C, Command.

Army H. Q., Deputy Director of Hygiene and Pathology, adviser to the Director of Medical Services who is adviser to the Chief of Staff.

Dental Centres :— To a general hospital a Dental Centre is generally attached, which provides dental cover for all patients in the area.

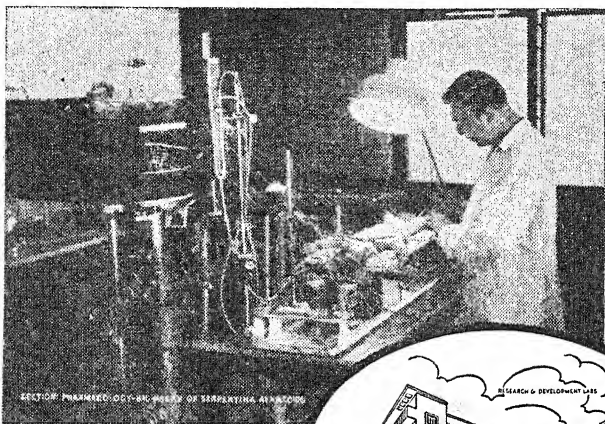
In every station, to provide medical inspection on a centralised basis, M. I. Rooms are run by unit Medical Officers. Low category personnel are evacuated to hospitals for further examination and treatment.

Armed Forces Medical Stores Depot located at Bombay deals with the procurement of all Medical stores and equipment for the Medical services from abroad or from within the country. The unit caters for the requirements of Southern Command. A. F. M. S. D., at Lucknow procures stores and supplies for the Eastern Command and Base Depot Medical Stores procures stores and supplies for Western Command. This is a field unit.

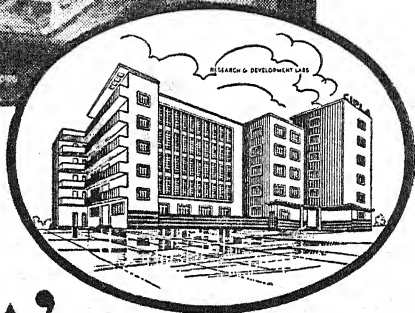
Each command has a laboratory called the Command Laboratory. Three such laboratories are located each at Bangalore, Delhi and Ranchi. Officer Commanding of this unit is adviser to D. D. M. S., in pathology. The unit, in addition to the normal duties of Laboratories carries out training of officers and Laboratory assistants..

Field Medical Units

General functions of Field Medical Units are (a) Prevention of disease (b) Collection of sick and wounded from the forward areas (c) Evacuation of the sick and wounded to the appropriate Medical Unit, which provides adequate facilities for treatment. (d) Treatment of sick and wounded.



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Field units are broadly classified into :—

Divisional Medical Units :— The medical staff in a division (and its lower formations) consists of (a) An A.D.M.S. (Lt. Col.) who is the head of the Medical services in the division. He is the commander of all Medical units in the division and advises the divisional commander on all medical matters (b) An A.D.M.S., (Major) who assists the A.D.M.S. (c) One O.C., Field Hygiene Section, though not on the establishment of Divisional Headquarters, advises the A.D.M.S., on all technical matters regarding sanitation and hygiene. (d) Attached Medical Officer (Captain Lt.) conducts the Divisional M.I. Room and during his spare time is employed as Staff Captain to A.D.M.S.

There is no medical staff on the H.Q., of formations below division O.C., Field Ambulance attached to a brigade (Lt. Col.), is called the Senior Medical Executive Officer of the brigade and advises the brigade commander on all medical matters. He controls all Regimental medical officers in the brigade regarding technical matters. The R.M.O., is the Medical adviser to the battalion commander.

Divisional Medical Units

(a) **Regimental Aid Post:—**This is the Medical establishment in a battalion and consists of the R.M.O., and the stretcher bearers of the Medical platoon.

(b) **Field Ambulances :—** These are divisional troops and are allotted on a scale of three per division. Some Field Ambulances are kept as Corps and Army reserve and on the line of communications. The Field Ambulances are of the following kinds :—

(i) **Divisional Field Ambulances :—** This unit consists of a H. Q., and two companies. The H. Q., can form the Main Dressing Station while each company can form an Advance Dressing Station. Each company is self contained and can be sub-divided into two platoons each capable of forming a Light Dressing Station.

(ii) **Light Field Ambulance :—** is organised to cater for armoured formations. It is designed to provide an evacuation system capable of covering a wide area on the principle of quick evacuation. A light field ambulance has fourteen ambulance cars on its establishment.

(iii) Para Field Ambulance :—Is designed for operation with para troops. It consists of a H. Q., and four sections. Unlike other field ambulances this unit has on its establishment two surgeons and an anaesthetist and equipment to form a surgical team of its own. It also has a dental officer on its establishment.

Field Hygiene Section :— The main types are :—(i) Divisional Field Hygiene Section (ii) Light Field Hygiene Section with an armoured formation (iii) Para Field Hygiene Section.

Anti Malaria Unit :— In theatres of war with high incidence of malaria, this disease has proved a menace to military operations. Anti Malaria units are therefore raised on the scale of one per division and L. of C. area but it is a non-divisional unit allotted to the division only when required.

Mobile Surgical Unit :— This is also a non-divisional unit allotted to a division only when required. This unit helps a great deal in saving lives in forward areas. It is capable of carrying out major surgical operations but cannot hold casualties and hence the necessity of attaching it to other Medical Units capable of holding casualties.

Bearer Company is to provide for evacuation of casualties in difficult country where mechanical transport cannot be used. They are provided at a scale of one per division.

Advance Base Transfusion Unit designed to give transfusion to casualties as early as possible.

Dental Unit :— A non-divisional unit may be allotted as and when required.

Motor Ambulance Section :— These are A.S.C., units concerned solely with the evacuation of casualties normally from M.D.S., backward.

Field Ambulance Troops :— This is another A.S.C., unit for evacuation of casualties.

ARMY PIONEER CORPS

The organisation and employment of labour is the function of the Labour Officer at all formation headquarters down to the Corps Headquarters. The Labour Officers are

either staff officer (Labour) authorised on the establishment of the headquarters concerned or are commanders of the Pioneer Groups working in formations.

(a) Provided by fighting troops or by Pioneer Groups. Fighting troops can be employed only when absolutely necessary and require no training for operations.

(b) Prisoners of War :— are employed for all tasks except those which are too dangerous. For security reasons they are not allowed to work in security area.

(c) Civilian Labour :— is conscripted, employed or hired for working in ports, installations and depots. In formations where a large number of civilian labour is employed the recruitment and organisation is controlled by the Labour Officer of the formation through a Provincial Civil Labour Unit which may be administered by the Pioneer Group on an as required basis.

Pioneer Groups normally consist of a headquarters and six to eight Pioneer Companies, all organised to work independently. Pioneer Companies are organised in the Headquarters and four platoons, each consisting of about eighty men. The platoon is the unit of military and labour and is not split further.

REMOUNT VETERINARY AND FARM CORPS

Before mechanisation, the Remounts, Veterinary and Farms used to be separate departments under the Quartermaster General. With the reduction in animal transport units, the three departments were amalgamated into one and placed under one Director.

The functions of the Corps can be divided into three branches :—

- (a) Procurement of Remounts from foreign countries.
Procurement of Remounts from local sources.
Breeding of horses/mules.
Training and handling of animals.
- (b) Control of contagious diseases amongst animals.
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- (c) Control of military, grass, dairy and poultry farms.
Distribution of farm supplies in peace areas.
Inspection but Not procurement in forward areas.

The corps is a 'Q' service and the Director, Generally a technical officer from Veterinary Corps, is under the Quartermaster General's Branch at Army Headquarters and his responsibility is to co-ordinate, direct and control all R.V.F. Corps establishments. In Commands he is represented by an Assistant Director with the rank of a Lt. Col., while at area/division level is a Deputy Assistant Director. In Field Formations the Army Corps headquarters has an assistant director. The corps establishments located in the Command are the direct responsibility of the Director at A.H.Q., except for local supervision and administration.

In peace station veterinary hospitals of different sizes such as class I, II or branch hospitals are formed depending on the number of animals in the area for treatment. In the field treatment and evacuation is organised on lines similar to those adopted for the evacuation of troops.

ARMY POSTAL SERVICE

In peace all postal requirements of the Army are met by the Civil Posts and Telegraphs Department which in larger cantonments provide post offices primarily for the use of troops. In war or during emergencies when the civil system breaks down, or in areas where adequate civil postal facilities do not exist the commitment is taken over by the Army Postal Service.

Functions :— (a) Provision of mail service to and within a formation (b) Carriage of official mail of classification not higher than Restricted (c) Issue of money orders (d) Sale of postal stamps postal orders and other postal stationery. (e) Registration of parcels and letters. (f) Booking and delivery of private telegrams.

The Army Postal Service is a 'Q' service with a Director under the Quartermaster General at Army Headquarters. It is his responsibility to maintain close contact with various agencies like the movement and transportation of directorates,

the civil air lines and Post and Telegraphs Department for routing and despatching of mails. The Service is manned by Army Service Corps personnel specially selected from the Civil Post and Telegraphs Department. The Director of Postal Service at Army Headquarters is represented by a Deputy Director at Force Headquarters during war and by a deputy assistant director at Corps level. In Area/Divisional Headquarters the officer commanding the divisional postal unit represents the Director of Army Postal Service.

Postal Units

Base Postal Depots :— The depots receive mail from the civil post offices in the country, are responsible for sorting, preparing and despatching mail by the quickest possible method to the post offices in the field.

Base Post Office :— This is a two way organisation. It receives mail from the postal dept. and despatches it to the units in addition to cross distribution of mail originating within the theatre to the units. All mail from the theatre are despatched to the postal depots for distribution through the civil post offices.

Field Post Offices :— Receives mail from the Base Post Office and other Field Post Offices, and distributes to units directly dependent on it. Conversely it receives mail from units/other Field Post Offices for distribution within the theatre of return to postal depots.

Divisional Postal Units (Army/Corps/L. of C., Postal Units) are organised to provide a main post office at Divisional Headquarters and three to four field offices for brigades. The main post office is generally located near the Divisional Rear Headquarters and two small post offices for Corps and troops.

ARMY CANTEEN SERVICE

The Army Canteen Service was formed on a permanent basis during World War II with the object of providing groceries, general necessities and other stores which are not provided by the Army Supply or Army Ordnance Corps. It aims at providing these stores to the troops at the lowest possible prices compatible with market rates by direct purchases from the manufacturers, thus eliminating the middleman profits.

The A.C.S., is a Q service controlled by the Chief Canteens Officer under the Quartermaster General at Army Headquarters. He is assisted by the Chairman, Board of Administration, Canteen Stores Department, which obtains and distributes all stores to serving units/formations. All units/formations employ contractors or run their own canteens. At lower formations control of Army Canteens is vested in the "Q" staff and no Canteen Service Officers are specially provided for.

Canteens can be only run by contractors approved by the Quarter Master General on the merits of their service, financial integrity, reliability and honesty. These contractors are according to their financial resources and experience classified in 'A' for major formation/station contracts and 'B' for unit contracts. All contractors are governed by Institute rules and are bound to abide by them vide the contract agreement entered into by them with the unit/formation. Registration of contractors on the Q.M.G.'s approved list is carried out periodically by instructions issued by the Q.M.G., from time to time.

All canteen stores required by the Army are purchased centrally by the Board of Administration, Canteen Stores Department, under the directions of the Quartermaster General. Stores are held by various depots or station canteens for distribution to units. Stock holding depots are managed by the Canteen Stores Department and are run on non profit basis. Station canteens are run by class 'A' contractors who are allowed a fixed percentage of profit on retail issues and handling charges on bulk issues to units. Prices of all stores are fixed by the Canteen Stores Department with the approval of the Board of Control, Canteen Services (India) of which the Quartermaster General is the Chairman. Price lists are published periodically to ensure uniformity of prices and to avoid profiteering.

In addition to the supply of grocery and general stores the Canteen Stores Depot also caters for liquor ration of entitled service personnel and occasional supply of hardware, crockery, cutlery and fancy items depending on the demands from the troops. Unit canteens also run soft drinks/refreshments stalls at the discretion of the officer Commanding Unit.

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ARMY CORPS MILITARY POLICE

The Corps of Military Police was organised in India in 1942. All the personnel are volunteers and are specially selected and trained. The Director of Personnel Services at Army Headquarters is the head of the provost services in India and is also the ex-officio Provost Marshal. At each Command headquarters there is a Deputy Provost Marshal. Field formations i.e., Corps and Division, have an Assistant Provost Marshal who is an adviser on all matters affecting Provost and traffic control. (He has no executive authority or command over the individual Provost units). In Brigades the provost duties are carried out by a Junior Commissioned officer who is advised by the Staff Captain 'A'. In units the provost duties are carried out by regimental police who are trained and controlled by the Adjutant of the unit.

Field Units

Army Headquarters, commands and corps have special types of Provost companies with establishment varying from ten to six sections in strength. The Divisional Provost company consists of headquarters and six or eight sections. The Provost section is the basic Provost sub-unit and is usually not split, although for few days it can be sub-divided into two sub-sections to work independently.

In operations the primary duty of the Provost becomes the maintenance of the forward momentum of traffic. It is also Provost duty to stop panic and avoid confusion on roads, control refugee traffic, organise transit of prisoners of war and establish cages for them. When the operations become static, the Provost has to pay more attention to disciplinary and checking duties. Special investigation Branch, which is a part of the Provost, is always on the look out for major crimes by and against the forces in the operational areas. They also combat designs to pilfer and sabotage military stores and property in big installations.

A Provost officer can at any time arrest and detain for trial any person (even senior in rank) who commits an offence. He can investigate accidents in which military officers are involved, liaise with intelligence and field

security officers. He is authorised to punish any follower who is a menial servant as prescribed in Manual of Military Law. He can check the identity of any person at any time and, if in doubt, can ask him to accompany him to Provost lines for further investigations. A Military policeman can check any vehicle and search it if it is suspected to contain unauthorised persons or goods. On order of the formation commander, a Provost officer can search the government quarters of any army personnel.

RANKS IN THE ARMY

Commissioned Officers

General: This is the highest rank in the Indian Army today) Lieutenant-General, Major General, Brigadier, Colonel, Lieutenant Colonel, Major, Captain, Lieutenant, Second Lieutenant.

Junior Commissioned Officers

The rank and appointment of J.C.O., are peculiar to the Indian Army and they were created because the British Officers, due to the natural handicaps resultant of their foreign nationality, could not directly exercise the necessary control over and establish close liaison with the other ranks. The rank was invested with certain powers and privileges of a commissioned officer. The great importance which the J.C.O.'s gained under such an arrangement made them the backbone of the Indian Army. In spite of the nationalisation of the officer cadre, the J.C.O., rank has continued and will continue to remain the back bone of the Indian Army. J. C.O.'s are Commissioned and Gazetted Officers. In all units an establishment is such that for every appointment of an officer there is an appointment of a J.C.O., who thus becomes the second-in-command and as such shares equal responsibilities with the officer in all matters of efficiency, welfare and administration. In cases of smaller sub-units (platoon etc.,) J.C.O.'s are commanders themselves.

The designation of J.C.O., rank has undergone many changes since its inception. During the régime of the East India Company J.C.O.'s were known as Native Officers. On the formal establishment of the (British) Government of India, they were known as Indian Officers. With the creation of the appointment of the Viceroy they were referred

to as Viceroy's Commissioned officers and after the cessation of the appointment of the Viceroy till to date they are known as Junior Commissioned Officers.

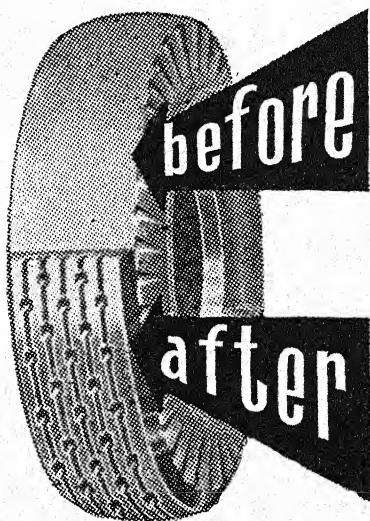
The J.C.O., rank is attainable normally through long and meritorious service in the ranks, though in special cases direct commissions are granted.

Other Ranks

Other Ranks :— mean combatants except the officers and J.C.O.'s which means only sepoys and N.C.O.'s but in its broad connotation it includes N.C.E.'s as well but not civilians attached to military units, such as religious teachers, schoolmasters, mess servants and private bearers.

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NAVY

HEADQUARTERS (NAVY)

Administratively and Operationally the Indian Navy is controlled from Naval Headquarters through a chain of Commands. Under the Chief of Naval Staff are various administrative authorities afloat and on shore, who are directly responsible to him for the day to day administration of the Service.

The Chief of Naval Staff is assisted by five Principal-Naval Staff Officers and Naval Headquarters.

CHIEF OF STAFF:— (who hitherto also was the Deputy Commander-in-Chief) is responsible for planning, operations, communication, intelligence and also the overall co-ordination of the staff.

CHIEF OF PERSONNEL:—is responsible for the recruitment, service conditions, training, welfare and discipline of the personnel of the Indian Navy for the appointment of officers and for maintaining discipline.

CHIEF OF MATERIAL:—is responsible for the material resources of the Service i.e., Ships, Crafts and Gunnery, Anti-Submarine, Torpedo, Electrical, Radar Equipment etc. He co-ordinates the scientific research and development in the Service and arranges repair and dockyard facilities. He is also responsible for Naval Ordnance Inspection and Naval Armament Supply Organisation.

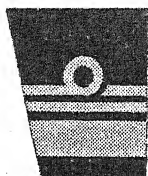
CHIEF OF ADMINISTRATION:— is responsible for all matters concerning supply of victualling, clothing and Naval Stores, pay, pensions, allowances, transport and works programme of the Navy.

CHIEF OF NAVAL AVIATION:—is responsible for all questions relating to the development of Naval Air Service.

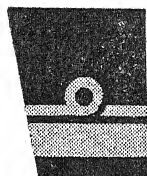
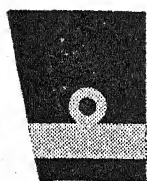
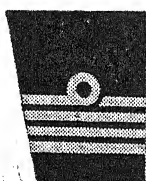
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ADMIRAL



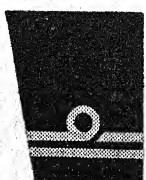
VICE - ADMIRAL

REAR-ADMIRAL &
COMMODORE
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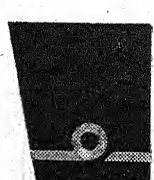
CAPTAIN



COMMANDER

LIEUTENANT -
COMMANDER

LIEUTENANT



SUB - LIEUTENANT

CHAIN OF COMMANDS

The command of various naval ships and shore establishments is exercised by the Chief of Staff through the staff channels of four operational and administrative authorities .. one afloat and three ashore. The authorities are :—

Rear-Admiral Commanding Indian Naval Squadron RECINS is responsible for the operation, administration and training of all ships in commission and placed under his command. He flies his flag in the Cruiser INS 'DELHI' and has under his control the 11th Destroyer Flotilla and the 12th Frigate Flotilla. The Destroyer Flotilla under the command of a Captain 'D' was formed in 1950 and comprises three destroyers 'INS 'RAJ-PUT', 'RANA' and 'RANJIT'. The Frigate Flotilla which is commanded by a Captain 'F' comprises 'INS JUMNA, SUTLEJ, KISTNA and CAUVERY. Anti Submarine frigate INS TIR is being used as a Boys' Training Ship. The Naval Squadron also has some minesweepers, a specially equipped survey ship INS 'INVESTIGATOR', the Tank Landing Ship 'AVENGER' and several types of landing craft.

THE COMMANDER-IN-CHARGE, Bombay (C. O. M. B. A. Y.) is responsible for the defence of Indian coast from the western border of Pakistan and India to the borders of Bombay and Madras States. He has under his operational control certain ships from time to time and the following shore establishments.

INS 'DALHOUSIE' This is the Base Establishment at Bombay and includes H.Q., of Bombay's Indian Naval Barracks, which is the central manning and reserve depot for ratings of the Navy, Naval Pay Office, Radar Training Establishment, Regulating Schools, Naval School of Physical Training; Bombay Fort Wireless Station; Indian Naval Chart Depot etc.

IN DOCKYARD:—This comes under the administrative control of the Commodore-in-Charge Bombay, provides extensive repair and refit facilities for ships up to the size of a cruiser. As at present constituted it is divided into seven departments :—

INDUSTRIAL MANAGER:—responsible for ship repair and refit.

COMMANDER OF YARD:—responsible for movement and docking of ships in the dockyard area.

NAVAL STORE OFFICER:— responsible for storing, maintenance and supply of all stores for ships.

NAVAL ARMAMENT SUPPLY OFFICER:—responsible for storing, maintenance and supply of all armament stores.

OFFICER-IN-CHARGE (S. P. D. C.),— responsible for maintenance and distribution of machinery and spare parts to ships.

GUN MOUNTING OFFICER :— responsible for fitting gun mountings in ships.

SENIOR MEDICAL OFFICER:—responsible for medical treatment.

THE COMMODORE-IN-CHARGE COCHIN (C. O. M. C. H. I. N.) :—is responsible for the coastal defence from the border of Bombay and Madras to Pamban Pass. He also co-ordinates the training of personnel in the Indian Navy and is also called the Commodore Superintendent, IN Training Establishment.

NAVAL OFFICER-IN-CHARGE VIZAGAPATAM :— also the Commanding Officer of the Boys' Training Establishment, is the seniormost naval authority on the East Coast and is responsible for defence from Pamban Pass to the border of India and East Pakistan. He has under him Resident Naval Officers at Calcutta and Madras who are responsible to him for the areas adjacent to these ports. He is also directly responsible for the training of boys in the Navy.

MAIN BRANCHES OF SERVICE

EXECUTIVE BRANCH :— Naval Officers in the executive branch are employed for seamanship, navigation, torpedo, anti-submarine and communication duties on board ship. Their duties comprise everything afloat except the engine room. While in command of a ship, Officers are responsible for the safety and fighting efficiency of the vessel. They have to look after the general working, discipline and welfare of the ratings, the safety of the explosives, and the cleanliness of the ship.

The Commander of a ship has under him a staff of Signal, Gunnery, and Navigation Officers. Signal Officers supervise

the internal signals organization of the establishment and bring about the co-ordination of wireless and visual branches of the signals department. The Gunnery Officer is in-charge of all guns, gun mountings, range finders, direct or firing gear and magazine. He is also responsible for the training of the gun crews. A Navigation Officer is under the direction of the Commander and he is in-charge of the navigation of the ship. In action the Navigation Officer remains on the bridge and records all alterations of course, speed etc., and must be able to determine the position of the ship during all phases of action.

A ship has also several other Officers like Anti-Submarine Officer, Officers of the Watch, Divisional Officers and other miscellaneous officers.

The Anti-Submarine Officer has a very onerous duty while the ship is in action. He is in-charge of all submarine detecting material, the instruments, machinery and fittings for its operation, and also looks after the training and efficiency of ratings required for submarine detection. He must keep the Commander constantly informed about the position of the submarine. When hunting a submarine, he has to supervise the operation. When engaged in attacking a submarine, he indicates when to fire the depth charges. His action station is the ASDIC room which adjoins or is above the bridge.

The Officer of the Watch is not a separate Officer with special duties. When at sea, a ship never sleeps. Some Officers and men are always on the watch. Each junior officer has to take duty as Officer of the Watch on the Bridge. During the period of the duty, he is responsible for the safety of the ship, discipline, the daily routine, all incoming and outgoing signals and the writing of the log-book. His main function is to report to the Commander if anything unusual is seen or happens, but in an emergency, such as the risk of a collision, or a submarine attack, he has to use his initiative and issue the necessary orders.

Divisional Officers are responsible for the supervision of ratings and men allotted to their care. These Officers look after discipline, training and welfare, games, sports and other forms of recreation. They have to encourage their men and keep them in a state of high morale. Their duties

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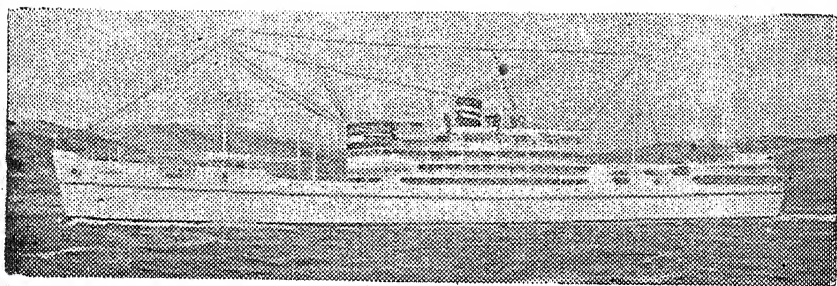
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are perhaps the most important in a ship, because in the Navy, especially "It is not so much the guns that matter as the men behind the guns."

In big ships there are also Stores Officers for the maintenance of permanent and consumable stores. Messing Officers and Provision Officers look after the feeding of the crew.

ENGINEER OFFICERS

Engineer Officers are responsible for the maintenance and operation of the main propelling machinery and boilers and auxiliary machinery of ships including gun mounting. The duties of Engineer Officers in various vessels are as follows :—

In a motor vessel there is usually only one Engineer Officer who maintains the motor engine and undertakes minor servicing repairs while the vessel is afloat.

In the Landing Craft Wing, the Base Engineer Officer at Headquarters is responsible for the general upkeep of the flotillas. The flotilla Engineer Officer is normally at the shore base, but he may be sea-based on a parent craft during operations. He is responsible for maintenance and for notifying shortages, including shortage of fuel.

During operations, ordinary maintenance is under the Craft Commander, but when the Craft Commander returns to base, it is the Flotilla Engineer Officer who becomes responsible for inspection, repairs and replacements. In light coastal forces the duties of the Engineer Officer are broadly similar to those in Landing Craft Wing.

In a steamship the Engineers are in-charge of the engine room, and although they do not normally take duties outside the engine room, they may occasionally have to perform instructional duties and make stores returns. In action, the Chief Engineer looks after the maintenance of steam pressure in order to keep the engine working, while the Junior Engineer Officer is given command of either the fire party or the repair party or may be detailed to remain in the boiler room.

Occasionally Officers in the Engineering Branch have to take charge of installation, maintenance and repairs of naval ground mountings.

MEDICAL

Officers of this branch are responsible under the Captain for maintaining the health of the personnel and for advising the Commanding Officer with respect to hygiene and sanitation affecting the command. They provide care and treatment on board. Certain classes of ships carry Dental Officers who provide dental care and treatment to personnel on board.

SUPPLY AND SECRETARIAT OFFICERS

Supply and Secretariat Branch Officers are responsible for the keeping of the pay accounts of ratings, cash account of the ship, counting of the naval stores, provisions and clothing and generally for catering on board the ship. They carry out all secretariat work and also advise on legal matters.

The most important officer in the Supply and Secretariat Branch is Accountant Officer. As Secretary to the Commander he keeps all confidential papers and correspondence. He distributes salaries to the ratings, is responsible for ratings' diet attends at Court Martials as an observer and performs all divisional duties in the Domestic Division which includes cooks, stewards and writers.

ELECTRICAL OFFICERS

Officers in the Electrical Branch are responsible for the running and maintenance of all the electrical machinery and equipment of the ship. The electrical machinery of a ship includes the main generating machinery and switch-gear, radar and radio equipment, gunnery and torpedo control instruments and navigational equipment.

Electrical Officers are usually attached to base and come to sea only when required. They have to make a routine inspection of the ship, and to fit out and repair electric installations as necessary. The work is largely out of doors and may involve considerable physical strain. There are opportunities, however, for designing new appliances. The Electrical Officer's work is normally a technical one, but it also carries responsibility for the handling of men, and therefore needs a sufficiently self-assured personality.

LANDING CRAFT WING

The Officers in the Landing Craft Wing are termed Boat Officers. They are generally in command of one or two landing craft, each with a crew of four and spares. The officers are Divisional Officers of their men and have administrative responsibility regarding stores, accounts, etc. In action a Boat Officer has an important function to perform.

Whenever his craft carries soldiers, he has to command them during the period of the landing. The Boat Officer's most important duty in operations is visual signals. Immediately superior to the Boat Officer is the flotilla Officer commanding a varying number of vessels depending upon the carrying capacity of the parent ship.

The craft in the Landing Craft Wing are of four types :

- (1) LANDING CRAFT ASSAULT, which is meant for initial attack;
- (2) LANDING CRAFT MOTOR TRANSPORT, which is meant for landing heavy stores;
- (3) LANDING CRAFT SUPPLIES, which is equipped with gunnery specialists; and
- (4) LANDING CRAFT PERSONNEL, which is faster but more vulnerable than the former.

The duties of a Boat Officer in charge of all these craft are strenuous and hazardous calling for marked qualities of personality and leadership, strong determination and ability to adhere closely to simple instructions.

RANKS

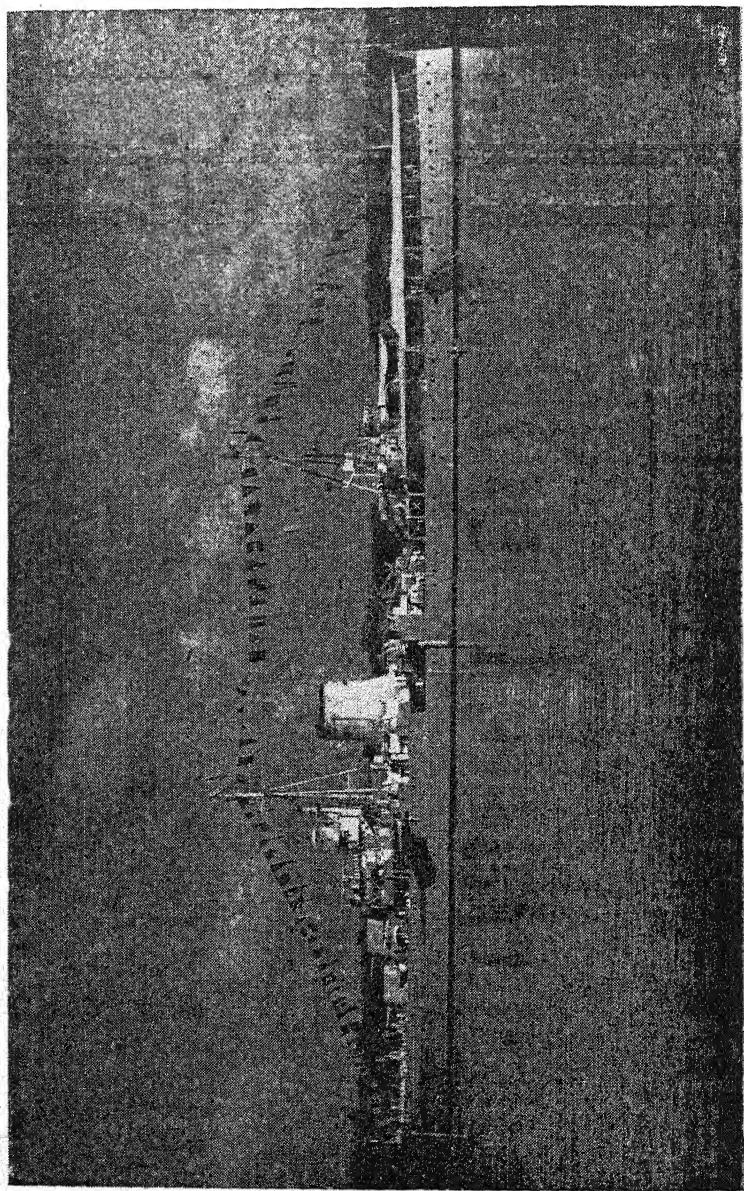
Officers :— Admiral (Indian Navy has so far had no officer of the Admiral's rank) Vice-Admiral, Rear Admiral, Commodore, Captain, Commander, Lieutenant Commander, Lieutenant, Sub-Lieutenant, Acting Sub-Lieutenant.

Others; Branch Officer, Chief Petty Officer Rate, Petty Officer Rate, Leading Rate, Able Rate, Ordinary Rate.

SHIPS IN THE INDIAN NAVY

FLAGSHIP I. N. S. DELHI

I.N.S. DELHI:—The first warship to be acquired by free India's Navy was I.N.S. DELHI, formerly known as H.M.S.



Flagship INS "DELHI",

ACHILLES. Since her acquisition in 1948, she has been the flagship of the Indian Fleet. Being the Flagship she flies the flag of the Flag Officer (Flotillas) Indian Fleet. This 6,030 ton cruiser was formally handed over to the Indian Navy (then Royal Indian Navy) on July 5, 1948, and on transfer was re-named as DELHI.

DELHI is a cruiser of the Leander Class. Her main armament consists of six 6" guns. In addition she carries several anti-aircraft guns of varied description as well as torpedoes. Her present complement is nearly 800 officers and men.

As ACHILLES she distinguished herself. In the early part of the last war, she covered herself with glory under the command of Captain W. E. Parry (now Admiral and former Commander-in-Chief of the Indian Navy) in the famous battle of the River Plate. After the battle, the ACHILLES was most of her time engaged in convoy and patrol duties in the far eastern waters.

Since her arrival in India in September 1948, and after being renamed DELHI, she participated in many training and tactical exercises with ships of the East Indies Squadron of the Royal Navy, Ceylon and Pakistan Navies etc.

She has carried many important goodwill cruises to countries including Indonesia and Malaya and Siam in the East, East Africa, Turkey, Greece, Syria etc., in the Middle-East and the West. Delhi along with Ranjit and Tir participated in the last Coronation Naval Review in June this year.

The latest naval exercises led by I. N. S. "Delhi" off Karwar coast concluded in September 1955.

With India's acquisition of the three destroyers I. N. S. RAJPUT, RANJIT and RANA towards the end of 1948 the destroyer squadron of the Indian Navy was formed with RAJPUT as the Squadron Leader.

With a displacement of 1,700 tons they have a main armament of 8 torpedoes tubes and four 4.7" guns each and are capable of a maximum speed of over 33 knots. They also carry anti-submarine equipment and weapons. They have a complement of over 200 officers and men each.

I. N. S. RAJPUT

I. N. S. RAJPUT is the Senior SHIP of the I. N. Destroyer Squadron. As H. M. I. S. ROTHERHAM, the RAJPUT was engaged in 1944 along with other Royal Naval ships in seeking a blockade runner reported to be operating between Japan and Europe. In 1945 she took part in many shipping sweeps in the Indian Ocean and covered the assault on Rangoon.

After arrival in India she has taken part in many goodwill cruises to East Africa, South East Asia, etc., and in combined naval exercises.

RAJPUT represented India at the Commonwealth Jubilee Celebrations held in Australia in 1951.

I. N. S. RANJIT

I. N. S. RANJIT as H. M. S. REDOUBT was engaged from the end of 1942 to the end of 1948 in an escort troop convoy in the Mediterranean. In the closing months of 1943, she was employed on convoy duties in the Indian Ocean. Two years later she covered an assault on Rangoon and till the end of the last war patrolled the Malacca straits.

After arrival in India she took part in many goodwill cruises to East Africa, South-East Asia and the Mediterranean etc., and in combined naval exercises.

Ranjit also participated in the Coronation Naval Review this year.

I. N. S. RANA

I. N. S. RANA was formerly known as H. M. S. RADAR and was first in action in the Sicilian campaign and later carried out bombardments in support of the allied army in Italy. Till 1944, she remained in the Mediterranean and then joined the East Indies Fleet in operations against the Japanese.

In company with other destroyers and flagship she has participated in many goodwill cruises to countries in South-East Asia and East Africa. She has also taken part in many combined naval exercises.

THE HUNTS

The three Hunt Class Destroyers, GODAVARI, GOMATI and GANGA, were acquired by the Indian Navy in 1953. They have each a displacement of 1,050 tons and six 4" A. A. guns, Pom-poms etc. The complement is about 150 each.

The three ships launched in 1940-41, were designed for escort duty and have taken part in many of the operations during the last war. They were formerly known as BEDALE, LAMERTON and CHIDDINGFOLD.

I. N. FRIGATE SQUADRON

The frigate squadron comprises I. N. SHIPS, JUMNA, CAUVERY, KISTNA and SUTLEJ. Displacement approximately 1,400 tons and of the maximum speed of about 20 knots they carry a main armament of six four-inch guns and anti-submarine equipment and weapons. They have a complement of about 200 officers and men. These ships came to the share of India on partition.

I. N. S. JUMNA:—The senior ship of the 12th Frigate Squadron I.N.S. JUMNA was first commissioned in May 1941 and is named after a tributary of the famous river Ganges.

During the last war she was engaged first in the convoy work in the British Homewaters and on the outbreak of the Japanese war was diverted to the Far East. Here she operated between Java and Malaya and on occasions carried out bombardment on enemy shore positions. Later her convoy duties ranged from the Persian Gulf to Madras and to Bombay, Colombo and Maldives. She also took part in two attacks on U-Boats prior to the landing on Sicily. In January 1951, she went on a cruise to the Persian Gulf and later to East Africa. Among the other places visited by her are Thailand, Italy, Sicily, Greece, etc.

I. N. S. CAUVERY:—Named after the well-known river in South India. I. N. S. Cauvery belongs to the modified "Black Swan" class.

In 1948 she did two trips to U.K., to take naval personnel for training, as well as for the manning of the India's Flagship, Delhi. CAUVERY has also played an important part in training young sailors.

For some time she was attached to I.N.S. VENDURUTHY, the navy's premier training establishment at Cochin. She has taken part in many goodwill cruises to the Persian Gulf and other neighbouring countries of India. During the last summer cruise she visited Italy, Sicily, Greece etc.

During the last war CAUVERY served in the Indian and Pacific Oceans and in support of the sea-borne assaults on

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s. s.	"JAG RANT"	8,010	1952
s. s.	"JAG TARA"	7,000	1954
s. s.	"JAG BINDU"	2,740	1942
m. v.	"JAG GANGA"	2,008	1951
m. v.	"JAG JAMNA"	2,008	1951

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Burmese coast in 1945. A few days after the fifth anniversary of Pearl Harbour, CAUVERY arrived in Tokyo Bay being the first Indian warship to enter the Japanese waters after the war.

I.N.S. KISTNA:—KISTNA was first commissioned in the U.K., in August 1943. In 1944, KISTNA provided major anti-aircraft escort to an Allied convoy and was heavily bombed by German Gliders.

During the last war KISTNA in conjunction with other sloops took an active part in the campaign in Arakan. During January to March 1948, KISTNA saw service in the Andamans and Nicobar islands when she was commanded by Captain J. T. S. Hall, who later became Rear-Admiral and Flag Officer, Indian Navy. KISTNA provided the Naval Guard-of-Honour for Admiral Mountbatten, the then Supreme Allied Commander, South-East Asia, when he visited the Andamans Islands after their re-occupation.

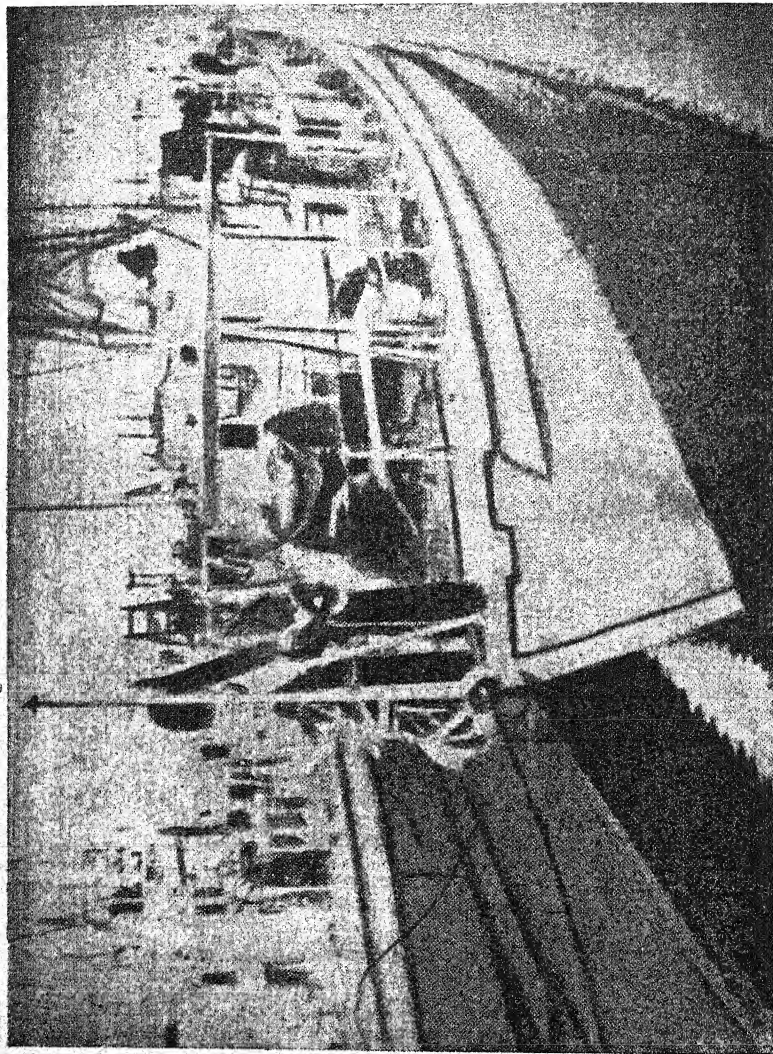
As unit of the frigate squadron she has participated in many goodwill cruises both in the east and the west. The countries visited by her include Thailand, East Africa, Italy, etc.

I. N. S. SUTLEJ:—I. N. S. SUTLEJ is now being used as a survey vessel, belonging to the "Bittern" class with a displacement of 1,750 tons and a complement of about 200 officers and men. She was built and commissioned in the United Kingdom in 1941. Soon after commissioning she saw convoy and escort duties in the North Atlantic and later operated in the Red Sea and also the Far East.

SUTLEJ also participated in the landing on Sicily on the D-day action assault beaches and in the amphibious assault on Rangoon.

In 1946, she represented the Indian Navy amongst the naval contingents of the British Commonwealth Occupation Forces in the Pacific.

Forming part of the frigate squadron until recently SUTLEJ has participated in many goodwill cruises and combined naval exercises. When I.N.S. DELHI was acquired she transported to United Kingdom a contingent of naval ratings required to man the cruise.



Inshore Minesweepers, 'INS' "BASSEIN" and "BAMLIPATENAM" which have now been added to the Navy.

I. N. S. TIR:—is a river class anti-submarine frigate of a standard displacement of 1,460 tons. Completed in 1943 she was commissioned in the same year and employed in the Eastern theatre of World War II. Later she was transferred to the East Indies Station and after this she was acquired by the then Royal Indian Navy.

After conversion she was utilized exclusively as the Boys' Training Ship and gave the incipient sailor his first taste of salt water in the Service. Recently it was decided to adapt I. N. S. TIR to give sea training to midshipmen. The ship thus has the honour of being the first midshipmen's training ship in the Indian Navy. Her present complement totals to about 230 officers and men.

In company with other ships of the fleet and individually TIR has carried many goodwill cruises to countries both in the east, middle-east and the west. During the last summer cruise she also participated in the Coronation Naval Review held at Spithead (U.K.).

INVESTIGATOR

I. N. S. INVESTIGATOR—was originally known as TRENT and later as KUKRI when she was taken over by India from the Royal Navy during the last war.

To facilitate the work of marine survey and to replace an old survey ship KUKRI was recently re-converted as a survey ship in the I. N. Dockyard at Bombay. Since then the vessel has been carrying out coastal survey.

It was because of the deep attachment the Indian Navy had for the old Investigator and also due to their desire to perpetuate her name that Kukri was re-named as INVESTIGATOR. The ship has been carrying out important marine survey, the results of which are of great value to our fighting as well as merchant navies.

MINESWEEPING SQUADRON

I. N. S. BOMBAY, KONKAN, BENGAL, RAJPUTANA,
MADRAS AND ROHILKHAND

The Fleet Minesweepers of the Indian Navy are armed with a single 12 pounder gun. With a displacement of about 600 tons and a maximum speed of 16 knots, they also carry anti-submarine weapons. They have a complement of about 100 officers and men.

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ETC., ETC., ETC.

I.N.S. BOMBAY :— I.N.S. BOMBAY, the senior ship of the Minesweeping Squadron belongs to the Bathurst Class with a displacement of 650 tons. The ship has been in the reserve fleet for some time until January 1952, when she was commissioned again.

Built in Australia during the World War II, the BOMBAY had seen active service in various theatres of war. In the beginning she was engaged in escort duty, later in April 1945 she became part of the 37th Minesweeping Flotilla and took part in sweeping the approaches to Rangoon, prior to its recapture by the allied forces.

She had also participated in minesweeping operations in the straits of Malacca and other areas in the Eastern Seas.

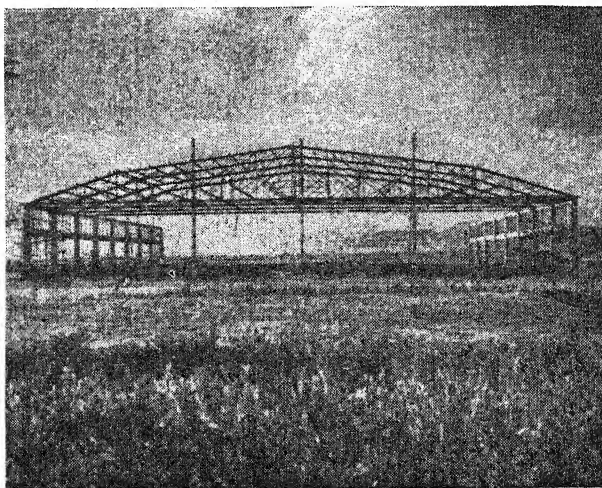
I.N.S. HATHI :— I.N.S. HATHI is an ocean-going tug of the Indian Navy whose duties involve assisting ships in manoeuvring in narrow channels and congested harbours and to tow those lacking power from one port to another. The ship also serves to provide the necessary naval training to personnel in these vital operations. As the warships are not designed for towing and HATHI is only an ocean-going tug her importance cannot be underrated.

Formerly known as S.T. CHINTHE which is incidentally a Burmese mythological character, HATHI was originally requisitioned from the Commissioners for the Port of Rangoon in 1942. During the last war she sank near Calcutta but was finally raised after three years in 1946 and then it was bought by the Government of India.

After salvage HATHI was re-conditioned at the I. N. Dockyard at Bombay.

Two Inshore Minesweepers — I. N. S. "BASSEIN" and I. N. S. "BAMLIPATENAM" have now been acquired by the Indian Navy and added to the fleet.

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AIR FORCE

Air Headquarters, India Command, on which rested the administrative and functional control of the Indian Air Force and the Royal Air Force in India, was itself, before August, 1947, was controlled by the Air Ministry in London. It ceased to exist and in its place a newly organised nerve centre of the Indian Air Force, redesignated as Air Headquarters came into being.

HEAD QUARTERS

The staff at Air Headquarters, which is responsible for the control and organisation of the Indian Air Force, administratively and functionally, within the over-all Defence Organisation in India is now the staff of the Chief of the Air Staff (hitherto also the Commander-in-Chief of Air Force).

The Chief of Air Staff who holds the rank of an Air Marshal is assisted by three Principal Staff Officers of Air Commodore or Air Vice Marshal rank, controlling three main Branches into which Air Headquarters is divided. Each Branch is subdivided into Directorates, headed by a Director of a Group Captain rank, with Deputy and Assistant Directors under him.

The Air Staff Branch :— comprises the Directorates of Operations, Policy and Plans, Signals and Intelligence and Training. At the head of this branch is the Deputy Chief of Air Staff holding the rank of Air Vice-Marshal. The Directorates under it are :—

Directorate of Operations :— is responsible for the formulation and implementation of policy of all air operations, it issues operational orders and instructions, maintains the standard of training and operational efficiency, plans training exercises, air armament and armament training and maintains contact with Army and Naval Headquarters for combined operations.

Directorate of Policy and Plans :— is responsible for the preparation of Air Staff plans for the defence of India and for the use of the Air Force in conjunction with surface forces. The Directorate is also entrusted with the responsibility of giving policy decisions on operational and peace time strength, location of units, airfield requirements on aircraft types and collection and collation of statistical data for preparation of plans. The Directorate also maintains liaison with the Director General of Civil Aviation, on matters of common interest to civil and Service aviation.

Directorate of Signals :— deals with the organisation of all signals and radar securities and decides on the policy of installation, maintenance and modification of all radio and radar equipment, in addition to the provision and maintenance of all landline communications required for the Service.

Directorate of Intelligence :— deals with the security policy, collections and collation of information of value to the Air Force and organisation and maintenance of an intelligence set up. It also maintains a close liaison with foreign Air Attaches and Dominion Air Advisers in India and with Indian Air Attaches and advisers abroad.

Directorate of Training :— is responsible for laying down and implementing, the policy of pre-squadron flying training, technical and ground training physical fitness and direction and control of education in the Air Force and training of Staff Officers.

PERSONNEL AND ORGANISATION STAFF BRANCH

Controls the Directorates of Organisation, Personnel, Medical Service and Accounts. The Directorates under this Branch are :—

Directorate of Organisation :— is responsible for the implementation of Air Branch policy on matters of raising, reorganisation, moving and disbanding units. Work Services, scale and provision of air force accommodation and furniture, formulation of establishment scales, organisation of Air Force Canteens and their contracts, provisioning of forms, publications, office equipment and stationery, anti-gas and fire services.

Directorate of Personnel :— is responsible for the policy of recruitment of officers, airmen and civilians. Postings,

transfers, promotions, discharges and all other matters pertaining to the personnel of the Service are also dealt with by this directorate. It also lays down the terms and conditions of service, pay, allowances, pensions, and service regulations. It is responsible for Court Martial and other legal aspects, honours and awards, dress and ceremonials, release and resettlement and welfare in the Service. In addition setting up of provost services and maintenance of liaison with military and civil security establishment also form part of its responsibilities.

Directorate of Medical Services :— controls the formulation and administration problems of medical policy, training of medical officers and airmen and provides Medical Boards for the IAF personnel and civil aviation air crew.

Directorate of Accounts :— deals with financial and accounting questions on cash, equipment, accounting, audit and procedure of non-public funds, pensions and gratuity and pay and allowances of Service and civil personnel.

Two other separate sections controlled by the Personnel and Organisation Branch are the catering and budget sections. The former is responsible for laying down the policy and for its implementation on matters relating to dietary system and for the planning and designing of kitchens and dining halls in IAF units. The latter prepares IAF budget estimates, obtains financial sanction of the Government of India and allots funds.

THE TECHNICAL AND EQUIPMENT STAFF BRANCH

Has two main directorates under it. They are :—

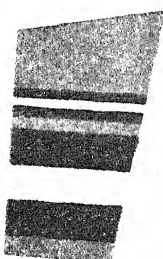
Directorate of Technical Services :— deals with the policy relating to the maintenance and servicing of airframes, modifications, aero-engines, electrical, photographic, radar and signal equipment and accessories. The laying down of policy and its implementation in regard to aeronautical inspection services and control of ground equipment and armament as also all IAF motor transport, are among the responsibilities of this Directorate.

Directorate of Equipment :— Provision, stocks, and supply of Air Force equipment, explosives, petrol, oil, lubricants

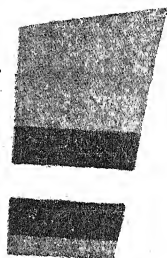
OFFICERS' BADGES OF RANK - AIR FORCE



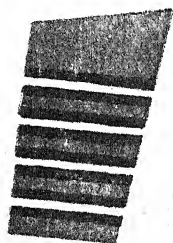
AIR MARSHAL



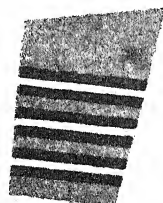
AIR VICE-MARSHAL



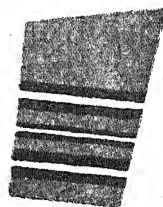
AIR COMMODORE



GROUP CAPTAIN



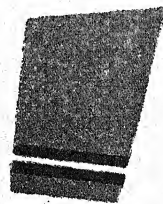
WING COMMANDER



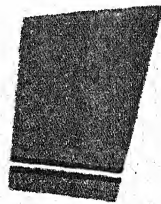
SQUADRON LEADER



FLIGHT-LIEUTENANT



FLYING OFFICER



PILOT OFFICER



FLYING BADGE - PILOT

and compressed gases, allotment and distribution of aircraft, spares and motor transport, vehicles and marine craft and many other items of equipment used by the IAF are dealt with by this Directorate.

COMMANDS & FORMATIONS

The two major formations under Air Headquarters are (a) OPERATIONAL COMMAND and (b) TRAINING, commanded by an officer of Air Commodore rank, designated as Air Officer Commanding. Other units directly under Air Headquarters are mainly, the flying training schools, the Base Repair Depots, and other Maintenance units and Equipment Depots, the Record Office which maintains documents of all airmen, the Central Accounts Office which maintains accounts of all IAF personnel and a few other units, are also directly under Air Headquarters.

Operational Command :— exercises control over all flying units, fighter, bomber, transport, reconnaissance and other operational front line Squadrons, through its several Wings, situated in various parts of the country. Each wing can either be composed exclusively of fighter, bomber and reconnaissance or transport squadrons or of two or more front-line units according to air defence policy.

Training Command :— exercises control over all ground training establishments both for officers and airmen. The provision of services and other administrative facilities to all these institutions, is made through the various Stations under the Command, with an Officer Commanding, usually of Group Captain's rank.

The implementation of policy relating to air operations and flying training of front line squadrons and aircrew, maintenance of aircraft and equipment and provision of services, in order to keep up the operational standard of the squadrons under its control, all come under the many responsibilities of a Wing usually commanded by an officer of Group Captain rank.

The strength of aircraft, aircrew and other personnel and in a Squadron differs according to the functional scope of a squadron. A squadron which is commanded whether by an officer of Wing Commander or of a Squadron Leader rank, depending upon the function of the unit, is further

split up into Flights, each flight sub-divided into two sections. Among the front line units under the overall control of Operational Command, forming a part of its one or the other Wing are also the Air Observation Post Flight equipped with Auster aircraft with Artillery (Army) Officers as their aircrew.

GENERAL DUTY (FLYING BRANCH)

GENERAL DUTY (FLYING BRANCH) The General Duty (Flying) Branch is composed of Air Crews, that is to say, of Pilots, Navigators and Wireless Operators and Air Gunners.

Officers in the General Duty Branch are required to perform general station and unit duties in addition to duties in the air. The duties of pilots are similar in most respects to those of the Commander of a ship at sea; they are responsible for the manoeuvring of the aircraft and also for the crew.

The Navigator is not a flier himself: whenever he goes up he is flown in a large bomber type of aircraft by a Staff Pilot. His main function is to look after navigational duties. Wireless Operators or Air Gunners give a running commentary to the Pilot while the latter is in action.

On entry, cadets are allotted to Fighter or Bomber Squadrons. As a rule Fighter Pilots have to be more alert than a Bomber Pilot. A Bomber Pilot leads a relatively more regular life; he knows in advance when he is likely to be called upon to fly, while life in a Fighter Squadron consists of long periods of inactivity, waiting and readiness alternating with short periods of intense concentration in action.

A Fighter Pilot is required to be perpetually ready, prepared to take off within three minutes of an alert, and ready for duty within 15 or 30 minutes of a call. In action, Pilots usually operate in formation, in which Junior Officers are placed under the command of a Section of Flight or Squadron Commander according to the nature of the operation.

On patrol, definite orders are given with regard to route and other matters, but the Pilot is expected to meet with any

emergency that may arise . On interception duty, when the formation has to carry out an attack on enemy aircraft, every Fighter Pilot is required to render instant obedience to the Section or Flight Commander who announces the plan of attack.

The actual time of action is very small compared with the time spent on search and on manoeuvring for position from which the attack is to be made. During actual attack the Pilot has naturally to proceed on his own, but he must never lose contact with the rest of his flight or overlook in his excitement his protective duties towards others.

Bomber Pilots are as a rule not given their objective and flying instructions until shortly before taking off, except in the case of dive bombers, when the Pilots are more like the Fighter Pilots.

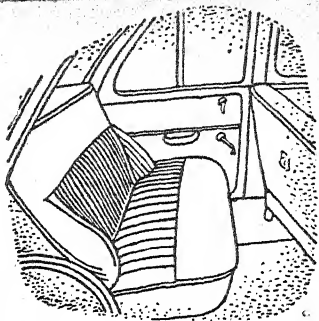
Fighter Pilots do not have much responsibility for their men and ground crews. That duty is entrusted to the administrative staff recruited for the purpose. Flight Commanders are, however, responsible for the discipline and welfare of their Pilots and ground crews in the same way as an Infantry Officer looks after his platoon.

Bomber Pilots have much greater contact with their men. Unlike Fighter Pilots, a Bomber Pilot, especially a heavy Bomber Pilot, has to act as the true leader of his crew; and it is on his personality that the efficiency of the aircraft as a unit largely depends.

In the allotment of cadets to the Fighter and Bomber Squadrons, the authorities naturally consider the qualities of personality. Keeness in flying, mechanical aptitude, quick-wittedness and youthful dash are regarded as proper qualities for Fighter Pilots, while Bomber Pilots are required to have greater calmness and responsibility and a personality which will inspire others with confidence. Pilots with qualities of doggedness and personal courage under adversity make good Bomber Pilots.

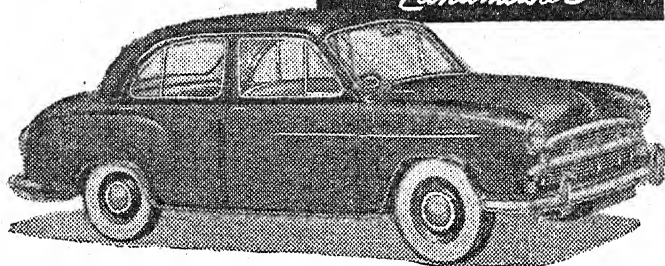
Navigators must be capable of mastering the principles of navigation and of applying them automatically in the face of danger. To make an effective contribution to the team, they need good initiative and a capacity to make rapid calculations without error under the stress of operational flying.

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For wireless operators and air gunners, good eyesight for aiming, range judging, aircraft recognition and estimating speeds are highly important.

TECHNICAL BRANCH

The Technical Branch consists of 4 sections. i. e., Engineering, Signals, Armaments and Electrical Engineering. These are all specialized branches which perform certain technical duties.

ENGINEERS HAVE TWO FOLD FUNCTIONS

(1) Organization and supervision of all major repairs to aircraft engines and fittings, and (2) supervision and assistance in carrying out all repairs, refittings and adjustments made on the aircraft in the Squadron workshop. Their functions require qualities of man management as well as engineering ability.

Officers in the Signals Branch are responsible for radio-location and maintenance of communication between air and ground and from point to point. They have to supervise the maintenance and repairs of the complicated apparatus and are responsible for the organization and running of the system of communications.

Others in the Armament Branch, when posted to a Squadron, are in charge of the crew and ammunition and the aircraft, their maintenance, surveying, repairing and reloading. In half formation, some of them are engaged on prototype design and remedying defects. Although mainly a technical and specialist job, the quality of coolness in a crisis is more necessary in their case than in any other specialised branch of the Air Force.

EQUIPMENT BRANCH

The Equipment Branch in the Indian Air Force deals with all stores, except stationery and fuel. Even parachutes, furniture, and engine replacement are included in stores.

The job in this branch carries heavy responsibility; maintaining and issuing valuable material requires patience, hard work, perseverance, ability and discretion.

The Equipment Officer in the I. A. F. is the equivalent of the Army's Quarter Master, except that his branch is separately constituted. He receives and enters stores, checks them, acknowledges them, stores them, and then issues them.

The Squadron Equipment Officer has a staff of (1) Flight Sergeant, (2) Corporals and (3) Aircraft hands.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH

In general all organizational and administrative duties not immediately connected with flying or with technical matters fall within the province of this branch. The duties involved are of a varied character from the handling of men down to codes and ciphers. The branch includes the following sections:—

(1) Administrative; (2) Codes and Cipher; (3) Catering; (4) Intelligence; (5) Link Trainer; (6) Motor Transport; (7) Photo; and (8) Miscellaneous, i.e., Marine Craft, Physical Training, Censor, Flying Control, etc.

Administrative Section :—

From this section are drawn the Squadron and Station Adjutants. They look after the routine administration of the Squadron, including the publication and execution of the Commander's orders, postings, transfers, and promotions and disciplinary matters. The welfare of Air Crew and Ground Staff, including accommodation, food and personal complaints of the men, are the special responsibility of the Administrative Section. The Section has to deal with a huge volume of correspondence and has to attend to many returns and routine forms. Among the administrative duties are included the duty of payment of staff and of censorship.

The work of the Section is difficult and even tedious, but is highly important. The adjutant is an important officer because of his responsibility in dealing with Air crews, staff and all men in the section.

The Air Force differs from the other services in that the responsibility for management is not distributed evenly throughout the service. It is concentrated in the hands of the Flight Commanders and the Squadron Adjutant. The

office of the Adjutant, therefore, involves qualities of personality and understanding of men.

Code and Cipher Service :—

Officers in the Code and Cipher Section have to prepare in code or cipher all messages sent out by the station and to decode and decipher all incoming messages and to maintain a record of both. The actual transmission of the signals is, however, the responsibility of the Signals Section.

The Code and Cipher Officer is in charge of all secret and confidential documents and is responsible for their safe custody. The work is not heavy except during operational activity.

Catering Section :—

The Catering Officers require good administrative experience. Their duties are more concerned with arranging diet on a large scale than cooking individual meals. The qualities that are needed are commonsense and integrity.

Intelligence Section :—

The Intelligence Officer is a very important link in the operational side and his responsibilities include the passing of information from higher Command to individual Pilots and vice versa at the close of an operation.

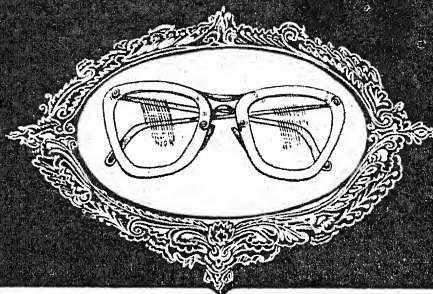
The Officer has to interview each member of the Air crew immediately on return from an operational flight and to draw up a report on the basis of the happenings during the operation.

It is on this report combined with photography that the Higher Command estimates the actual success or failure of the operation, the extent of the damage done, the number of enemy craft destroyed or damaged, and in case of reconnaissance flights, the value of the information obtained.

It is obvious that the work has to be done with great care and it requires considerable power of persuasion on the part of the Intelligence Officer. For when the Air crew report back from a lengthy and dangerous operation they are as a rule too tired to undergo a cross-examination.



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The Intelligence Officer is in charge of the Intelligence Room and keeps a record of all intelligence summaries.

Motor Transport Section :—

Officers in the Motor Transport Section fall into two main classes. Those with limited experience are M. T. Officers and are responsible for running and maintaining Station Motor Transport. Those who have gained advanced experience are classified as Automobile Engineers. In the case of all officers in the Motor Transport Branch it is imperative that they have a good knowledge of map reading, besides transport experience and a capacity for leadership.

Photo Section :—

The Photography Officers have a limited but highly specialised job. For the efficient performance of their duties they require a very wide experience of commercial geography and business.

Miscellaneous Section :—

In the Miscellaneous Section there are Officers dealing with such matters as physical training, education, welfare and marine craft. The job of the welfare officer is not well defined and consists largely of the organization of recreation and games. Marine craft is concerned with the handling of the boats and motor transport. The conditions of work are generally interesting although they can be, sometimes, extremely unpleasant.

Meteorological Branch :—

The Meteorological Branch is a specialised branch with the preparation and distribution of information regarding flying conditions. The Meteorological Officers are stationed both at Headquarters Formations and in Operating Squadrons, and their work consists mainly in taking observation with instruments and receiving and transmitting technical observations from and to the Meteorological Institutions established throughout the country.

From the information thus received they complete weather report for the district in general and, on request for any individual pilot proceeding on a cross-country flight. The work is exacting and is distinguished by its technical interest and character.

Education Branch :—

The Education Branch in the Indian Air Force organizes and conducts general and technical education for all ranks and cadets under training. It also prepares and holds educational tests for their reclassification as L. A. C. and their promotion to the rank of Sergeant. The Branch also organizes libraries, undertakes the education of the children of the service personnel and holds external examinations.

Ranks. :—

Officers :— Air - Marshal, Air Vice - Marshall, Air Commodore, Group Captain, Wing Commander, Squadron Leader, Flight Lieutenant, Flying Officer, Pilot Officer.

Others :— Master Warrant Officer, Warrant Officer, Flight Sergeant, Sergeant, Corporal, Leading Aircraftman, Aircraftman Class I, Aircraftman class II.

Flight Cadet is a pupil-pilot under training at the Air Force Academy. While at the Academy the highest rank which a Flight Cadet can hold is of under-Officer.



HISTORY OF I. A. F.

1933

Indian Air Force comes into existence. The first flight is formed with a few officers, airmen and four Wapitis.

1936

I. A. F. is engaged on watch and ward duties in the N. W. F. P.

1938

Two more flights are raised and the three flights together form No. 1 Squadron of the I. A. F.

1939

Manifold expansion of the I.A.F. follows the break-out of the Second World War.

Five volunteer Reserve flights to guard India's 3,000 mile coastline, are raised at Madras, Bombay, Calcutta, Karachi and Cochin.

Another coastal flight is formed at Vizagapatam.

1942

The strength of the I.A.F. grows to seven Squadrons. No. 1 Squadron goes to Burma for action.

1943

Two more Squadrons are formed bringing the total to nine.

1944-45

I.A.F. becomes the Royal Indian Air Force and Indian Squadrons equipped with Spitfires and Vengeances, go into action in the Assam and Arakan operations.

1946

In commendation of service rendered by the R.I.A.F., in the Eastern theatre of the war, No. 4 R.I.A.F. Squadron joins the British Commonwealth Occupation Forces in Japan.

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1947

Partition. R.I.A.F. is reduced to seven fighter and one Transport Squadrons.

I.A.F. gives a helping hand in the evacuation of Refugees which followed the partition of India. I.A.F. is rushed to Kashmir to save the valley.

1948

Formation of Heavy Bomber Squadron and Aircraft Testing Unit. Arrival of Vampire aircraft.

1949

Formation of Commands, Air Force Academies, Navigation Training Flight and Technical Training College is announced.

Introduction of the All-Through Training Scheme.

1950

The prefix "Royal" dropped on the birth of the Republic of India; R.I.A.F. becomes I.A.F. Changes in Air Force ensign, crest, symbols and uniforms. Republican gallantry awards are announced.

Introduction of Master Warrant Officer rank in the I.A.F.

Air Marshal Ronald Ivelaw-Chapman, C.B., C.B.E., D.F.C., A.F.C., takes over command of the Indian Air Force from Air Marshal Sir Thomas Elmhirst, K.B.E., C.B., A.F.C.

Hindustan Aircraft Limited, Bangalore assembles the first Prentice trainer aircraft, initial step taken in the construction of service aircraft in India.

Indian Air Force rushes food supplies to the areas devastated by earthquake in Assam.

No. 1 and 2 Air Squadrons of the National Cadet Corps formed at Bombay and Calcutta respectively.

1951

A six-man Goodwill Mission, headed by Air Marshal R. Ivelaw-Chapman, C-in-C, Indian Air Force goes for a week's visit to Far East Air Force.

I.A.F. again goes on a mercy mission to Assam.

Life boats and food supplies are dropped from the air in the flood affected areas of Assam.

Air Marshal G. E. Gibbs, C.I.E., C.B.E., M.C., assumes command of the I.A.F.

Armament Training Wing is set-up. Addition of Maritime — Reconnaissance Squadron, No. 2 I. A. F. Hospital at Jalahalli, No. 3 Air Squadron of National Cadet Corps.

Formation of I.A.F. Examining Unit and Flight Signaller's School.

1952

A Survey Flight as a separate Unit of the I.A.F. is formed.

Air drop of food supplies over the Muripur area in Uttar Pradesh.

Parliament passes the Indian Air Force Reserve and Auxiliary Bill. Formation of No. 4, 5 and 6 Air Squadrons of National Cadet Corps.

An Aero-Medical Society is formed by Air Force Medical Officers.

1953

A flight of two-seater Vampire Jet Aircraft, acquired by the Indian Air Force, is ferried from England to India by I.A.F. pilots.

First batch of Burmese airmen trained by the I.A.F. as technicians, passes out .

Aerial reconnaissance off the Eastern coast is carried out by the I.A.F. planes in search of fishermen in their catamarans marooned off the Madras coast.

I.A.F. undertakes a novel peacetime mission of sowing seeds from the air over a long stretch of Rajputana desert.

A flight of the newly acquired Ouragan Jet aircraft is flown out from France by I.A.F. pilots to India.

I.A.F. undertakes a historical flight over Mount Everest a week after the conquest of the summit.

1954

The first flight of C-119 transport aircraft acquired by the I.A.F. is flown out from America by the Indian Air Force aircrew.

Air Vice-Marshal S. Mukerjee takes over as Chief of the Air Staff and Commander-in-Chief, Indian Air Force, in the rank of Air Marshal.

Nearly a 100 aircraft take part in Fire-Power demonstrations at Tilpat, 14 miles from Delhi, to celebrate the "coming of age" — 21st Anniversary of the I.A.F.

The President presents the President's Colour to the I.A.F. Prototype of an "Anti-G Valve of original design is successfully produced by one of the I.A.F. Aero-Medical research centres.

I.A.F. Air drops urgently needed medical supplies over Gynatse.

I.A.F. Helicopter brings to safety 15 villagers marooned in the middle of the Jammuna river. An I.A.F. Goodwill Mission, headed by Air Vice-Marshal A. M. Engineer, D.F.C., goes to Indonesia.

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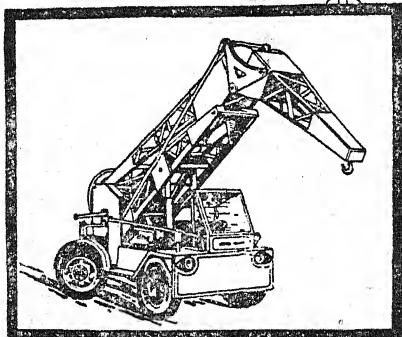
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ORDNANCE FACTORIES

The Indian Ordnance Factories offer a worth while career to any young man prepared to work hard and assist in the defence and industrial development of the country. A special feature of these factories is that they provide opportunities to all types of young men, from the highly qualified person, with a good engineering degree, to the young boy of 14 in his seventh class at school, who is unable to complete his education and wishes to earn his living while he learns a trade. Between these extremes there is also scope for those who have passed their Matriculation, Intermediate, Degree or Diploma examinations, skilled mechanics, foremen, supervisors and workmen of all types and degrees of skill.

To any one interested in engineering, chemistry, leather work, tailoring or any manufacturing activity which calls for the application of theory and practice, or even practice alone, a career in the Ordnance Factories will provide the necessary scope. The need of the moment is that our youth should become technically minded and that India should become independent in the technical field. To meet this demand for technical education, the Ordnance Factories have introduced some training schemes conceived on the principle of "earning while learning".

The Ordnance Factories, some 20 in number, are State-controlled units responsible to the Government for the production, specially of military stores, such as armaments, ammunition and explosives, as well as certain types of general stores for the Defence Services, such as leather and textile manufactures, optical goods and scientific instruments. They are located in different parts of the country, from Uttar Pradesh in the north to Madras in the south, from Bengal in the east to Delhi in the west, and they employ some 70,000

persons. The range of manufactures, which is constantly increasing, covers fireworks to airbombs, artillery vehicles to microscopes, and uniforms to parachutes.

All the Ordnance Factories are Centrally controlled by the Director-General, Ordnance Factories at Calcutta, who is responsible to the Ministry of Defence of the Government of India. He is assisted by 40 technical and administrative officers and a staff of about 400. Each factory is under the executive control of a Superintendent, who is assisted by a Works Manager, Assistant Works Managers, Foremen, Assistant Foremen and ordinary workmen. Under the Superintendent, the functions of production, provisioning, civil engineering and administration are carried out by the different Works Managers and Assistant Works Managers concerned. Whereas the Assistant Works Manager controls a whole activity, the Foreman controls a phase of that activity, e.g., a blacksmith's shop, which provides forgings for rough-machining in the machine shop. The Foreman, assisted by the Assistant Foreman, has independent charge of a workshop. The Chargeman and the Supervisor are responsible for the control of parties of skilled and unskilled workers and for the correctness of the work done by them. In each case the officers, staff and labour are required to work with their hands and apply their mind according to their different degrees of skill.

TRAINING SCHEMES

BOY ARTISANS :— The Boy Artisan scheme is intended primarily for young boys who for certain reasons are unable to continue their academic studies but who evince an interest in manual work. An educational standard up to the seventh class and an age range of 14 to 16 years are required.

Both theoretical and practical training are imparted, the normal period of training being three years and a half, adjusted to the needs of each case. Training is given in one trade, e.g., that of turner, fitter, etc., and on its completion, the youth becomes an artisan who, with experience in his trade in due course, turns out to be a skilled craftsman qualifying himself for selection to the supervisory grade.

During training, the boys are given pay in the scale of Rs. 20- $\frac{1}{2}$ -25 plus allowances as are allowed to workmen amounting to Rs. 35 to 50 a month. Promotion is given on

the basis of ability during training, and piece-work rates providing opportunity for augmenting their incomes are admissible to trainees who become sufficiently competent for such work.

SKILLED WORKMEN :— A literate workman from among factory employees or recruited from outside may apply for training as a semi-skilled worker, and thereafter continue training up to the skilled grade. The training given consists of instruction in the correct application of tools and the finer processes of the particular technical activity involved.

During this training, which is carried out during normal working hours, the factory worker receives his regular pay and allowances — a new recruit Rs. 30 p.m., plus allowances amounting to Rs. 35 to 50 a month. When sufficiently proficient, he draws pay at higher rates and works on piece rates.

APPRENTICES :— The apprentice training scheme is intended for young men who have passed at least the Intermediate Examination in Science or Engineering or obtained the Cambridge School 'A' certificate or taken a diploma or a degree in Metallurgy, Physics, Chemistry or Mathematics or Leather Technology. The maximum age limit for candidates who have passed the Intermediate Examination is 19, and for others it is 23 years.

The period of training varies from two and a half to four years and covers instruction in the theory of workshop practice and practical training in craftsmanship of the particular trade or branch of trade selected. Candidates who have passed the Intermediate Examination receive pay from Rs. 60 to 90 p.m., and graduates from Rs. 80 to 90 p.m., plus allowances which are at present Rs. 45 to 72 a month. Hostel accommodation, where available, is provided for apprentices during the training course. A successful apprentice is qualified for absorption as Chargeman or Supervisor, from which position he can expect to rise in due course to Assistant Foreman and Foreman and eventually, if qualified, to higher managerial appointments, such as those of Assistant Works Manager and Works Manager and even Superintendent of a factory. During training, 15 days' full pay or 30 days' half pay leave is admissible. Hostel accom-

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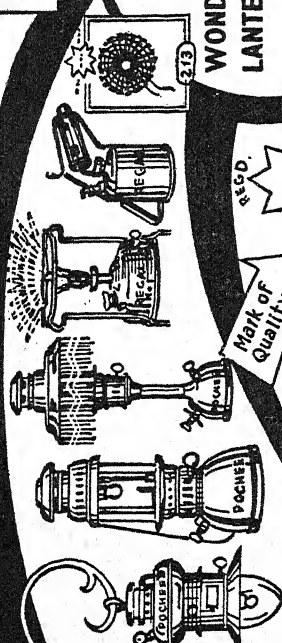
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modation, where provided, is free of house and furniture rent and water, electricity and conservancy charges.

A special artisan training scheme is now functioning at the Machine-tool Prototype Factory, Ambarnath, near Bombay, which differs from the scheme mentioned above in some respects. The age range is 14 to 17 years and the educational qualification is Matriculation. The trades taught are those of turner, fitter, tinsmith and carpenter, and the training period lasts five years, the last two years being spent in the Machine-tool Factory. Theoretical as well as practical training is given.

During the first three years of training, the trainees are provided with free board and lodging in hostel and, in addition, receive pay at the rate of Rs. 20- $\frac{1}{2}$ -21. Thereafter they receive pay at the rate of 55 and Rs. 60 in the fourth and fifth years respectively plus allowances amounting to Rs. 35 to 50 p.m., and are absorbed as skilled craftsmen, eligible for promotion to higher grades. Ten days' casual leave on full pay and vacations of three weeks each every six months are allowed.

DRAUGHTSMEN :— For boys who have shown an aptitude for draughtsmanship during their school career, draughtsman training in the Ordnance Factories scheme should make a particular appeal. The scheme is in two phase, i.e., training for draughtsmanship and training for senior draughtsmanship. A trainee for senior draughtsmanship is required to have three years' experience in an engineering works or should have worked as a draughtsman for two years. The courses normally last a year and are planned to give to the students under expert guidance instruction in the finer points of draughtsmanship and to produce senior draftsmen for jig and tool work—a specialist line.

During training, pay is given to senior draughtsmen at Rs. 70 p.m., plus allowances, and to draughtsmen at Rs. 55 p.m., plus allowances which amount to about Rs. 45 to Rs. 70 p.m. Successful candidates are absorbed in the Ordnance Factories as Senior Draughtsmen in the scale of pay of Rs. 150-225 and Draughtsmen in the scale of Rs. 100-185. As a specialist, the Senior Draughtsman can rise rapidly, even to a gazetted grade.

ASSISTANT WORKS MANAGERS :— The Assistant Works Manager training scheme is for the training of

candidates with engineering degrees who are below 25 years of age and who are recruited through the Union Public Service Commission. This class of officers is destined to fill the higher managerial appointments in the Ordnance Factories organization.

The scope of this scheme is to impart to these trainees, under expert engineers and competent administrators, the advanced science of their trade as applied to armaments production, factory management, administration and labour control. The normal training period is three years, and it can be varied according to competency. Trainees receive pay and allowances in the Assistant Works Manager's scale while under training i.e., the pay scale of Rs. 350-350-380-380-410, plus allowances amounting to about Rs. 70 to Rs. 170 p. m., at present.

On the satisfactory completion of training, these officers are absorbed in permanent or semi-permanent posts. Fifteen days' casual leave and 16 days' earned leave in the first year of service and 33 days in a year thereafter are admissible for the temporary personnel, and subscription to a contributory Provident Fund is permissible to them after they have been permanently absorbed, when they become eligible for promotion to higher technical and managerial posts.

The pay offered to the employees is good, leave liberal and security after retirement is ensured by a generous Provident Fund system. Opportunities for promotion are excellent for a person who takes his work seriously and gives of his best, and the esprit de corps is high among the factory employees.

For security of tenure, it should be realized that the Ordnance Factories constitute one of the largest manufacturing organizations in the country, with a production potential that can be switched over from making armaments to producing consumer goods if necessary. Any large scale reduction in establishment is therefore improbable. On the other hand, as the country has to be made more and more self-supporting in the production of defence equipment, the factory organization is likely to expand with time.

The Ordnance Factories have their own residential estates, which accommodate a large percentage of the

different classes of employees. There are clubs for senior and junior grades. There are excellent medical arrangements, including well staffed and adequately equipped hospitals and dispensaries. Thriving co-operative societies assist in keeping down living expenses. Educational facilities are provided on factory estates for the employees' children. Transport is available for shopping and other purposes. In addition, there are other amenities such as child welfare and maternity centres, canteens, reading rooms, sports, etc.

The various training schemes now in operation in the factories are planned to attract the right type of youth and to give the State and the individual the maximum return for honest effort.

The following are the different scales of pay in the Ordnance Factories :

GRADE	MONTHLY PAY SCALE
Superintendent Grade I	.. 1,300-60-1,600
Superintendent Grade II	.. 1,000-50-1,400
Works Manager	.. 600-40-1,000-1,050- 1,100-1,100-1,150
Assistant Works Manager	.. 350-350-380-380-30- 590-EB-30-770-40 850
Foreman	.. 360-20-500
Storeholder	.. 300-20-460
Assistant Foreman	.. 300-20-400
Assistant Storeholder	.. 260-15-335
Chargeman Grade I	.. 260-15-350
Chargeman Grade II	.. 200-10-300
Supervisor 'A' Grade	.. 150-7-185-8-225
Supervisor 'B' Grade	.. 100-5-125-6-155-EB- 6-185

WORKMEN:— There are different scales, varying according to trade and skill, the lowest of which is Rs. 30- $\frac{1}{2}$ -35 and the highest Rs. 135-5-155-6-185, plus allowances which range from Rs. 35 to 50 a month. The intermediate pay scale is Rs. 105-5-130. Those who are put on piece-work—and they constitute a very considerable proportion of the total number—have the further opportunity of augmenting their income by their dexterity and skill which will be reflected in increased out-turn and consequently increased piece work earnings.

Training Scheme	Factory	Location	Authority to whom applications should be addressed
C. Apprentice	Gun Carriage Factory	Jubbulpore	Director-General, Ordnance Factories, 6, Esplanade East, Calcutta
	Rifle Factory	Ishapore	— Do —
	Gun and Shell Factory (Ammunition Factory)	Cossipore	— Do —
	Metal and Steel Factory	Ishapore	— Do —
	Cordite Factory	Aruvankadu	— Do —
	Harness and Saddlery Factory	Kanpur	— Do —
	Clothing Factory	Shahjahanpur	— Do —
D. Senior Draughtsman and Draughtsman	All factories as shown against Boy Artisans except the High Explosives Factory and the last five factories.		— Do —
E. Assistant Works Manager	All factories as shown against Boy Artisans		— Do —

Secretary, U.P.S.C.,
New Delhi

DEFENCE PRODUCTION BOARD

As a first step towards the implementation of the recommendations of the Baldev Singh committee's report, the Government have constituted an autonomous Defence Production Board with Shri Mahavir Tyagi, Minister of Defence Organisation, as its Chairman. One of the main objects of Shri Tyagi's visit to the United Kingdom and to some other West European countries was to study the working of the Defence Production Institutions there and also to explore the possibilities of securing the services of expert technicians for the proposed re-organisation of Ordnance Factories in India.

This Board, consisting of eight members, has a controller-General of Defence Production, who is its administrative head and Vice-Chairman. The Board comprises of the senior representative from each of the three Services, a senior representative of the Ministry of Finance (Defence), the Director-General of Ordnance Factories and the Scientific Adviser to the Ministry of Defence. A Deputy to the Controller-General acts as the Secretary of the Board. There is also a Committee associated with the Board consisting of representatives of the railways and other Government Departments. Representatives of the Railways and other Government Department of Industry are also invited to attend meetings of this Committee from time to time.

The constitution of this Board was felt necessary as the present system of management of the Ordnance Factories was not considered suitable for effectively dealing with the production of defence stores. As it was considered essential that unless the industrial character of the factories was fully recognised, no improvement in working could take place, the new Board has been vested with autonomous powers so that it can settle most of the problems without having to refer

to different departments or Ministries. Apart from its managerial role in relation to Defence Factories, the Board performs two other important functions. It co-ordinates research, development and design activities in the three Armed Services with Defence production. In addition, it secures effective liaison with civil industry for meeting Defence requirements both in peace as well in an emergency. There is liberal delegation of powers by the Defence and the Finance Ministries to the Controller-General to the Board; and by them in their turn to the Director-General of Ordnance Factories and the Superintendents of individual factories. All policy and important matters are disposed of by the Production Board and the Controller-General, the day-to-day administration of the factories being left to the Director-General of Ordnance Factories and his Superintendents.

The Board meets once a month or more often, if required. Only such matters as are not covered by the powers given to the Controller-General and the Production Board are referred to the Government for orders.

MANUAL OF HYGIENE FOR THE ARMED FORCES

The Directorate-General of the Armed Forces Medical Services has brought out a Manual of Hygiene for the guidance of medical officers of the Armed Forces.

The first edition of what was known as the Field Service Hygiene Notes was published in 1919. This book was revised in 1940 and again in 1945. Since then many changes have taken place following independence. The revised edition which is called "Manual of Hygiene for the Armed Forces 1953" took several years to complete. It incorporates several radical changes due to the many recent advances in the preventive measures and the experiences gained during the last war.

Four new chapters — on "Soldiers' clothing", "Industrial Hygiene", "Special hygiene problems afloat for the Indian Navy", and "Special health problems in aviation for the Indian Air Force" — have been included. A separate chapter has also been added on the effects of atomic explosions and their prevention.

A matter of some interest to scientists is the inclusion of data on "comfort zones" collected by the Defence Science Laboratory at New Delhi. These and a few other subjects dealt with in the book are the result of research by Indian specialists and scientists.

The manual which runs into nearly 1,000 pages is illustrated with 91 pictures and includes an index for quick and easy reference. The Director-General of the Army Medical Services at the British War Office has described the Manual as the best of its kind in the world.

The Manual is distributed by the Manager, Government of India Publications, Delhi.

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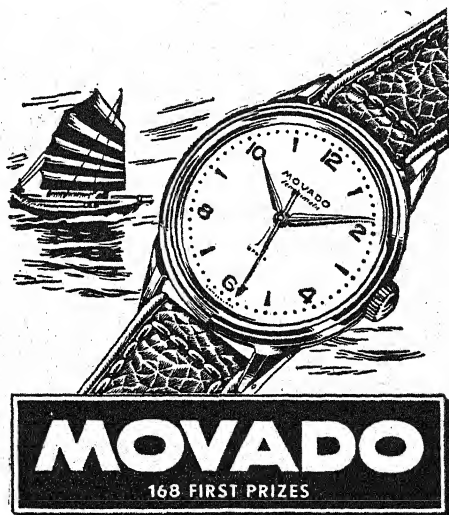
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1748 - 1955

Name	Assumed Office
Major Stringer Lawrence	January, 1748.
Colonel John Aldercron	1754.
Colonel Robert Clive	December, 1756.
Major John Caillaud	25th Feb. 1760.
Major John Carnac	31st Dec. 1760.
Lieut. Colonel Eyre Coote	April 1761.
Major Thomas Adams	1763.
Major John Carnac	January 1764.
Major Hector Munro	July 1764.
Brigadier-General John Carnac	January 1765.
Major General Robert Lord Clive	April 1765.
Colonel Richard Smith	29th Jan. 1767.
Brigadier-General Sir Robert Barker	24th March 1770.
Colonel Alexander Chapman	18th Jan. 1774.
Lieut-General Sir John Clavering, K.B.	2nd Nov. 1774.
Lieut-General Sir Eyre Coote, K.B.	25th March 1779
Lieut-General Robert Sloper	21st July 1785.
Lieut-Gen. Charles Earl Cornwallis, K. G.	12th Sep. 1786.
Major-Gen. Sir Robert Abercromby, K.B.	28th Oct. 1793.
Lieut-General Sir Alured Clarke, K.B.	16th March 1797
Lieut-General Gerard Lake (Afterwards Lord Lake)	13th March 1801
General Charles Marquis Cornwallis, K.G.	30th July 1805.
General Gerard Lord Lake	5th Oct. 1805.
Lieut-General George Hewitt	17th Oct. 1807.
Lieut-General Sir George Nugent	14th Jan. 1812.
General Francis, Earl of Moria, (afterwards Marquis of Hastings)	4th Oct. 1813.
Lieut-General the Hon'ble Sir Edward Paget, G.C.B.	13th Jan. 1823.

Name	Assumed Office
General Shapleton Lord Combermere, G.C.B.	7th Oct. 1825.
General George, Earl of Dalhousie, G.C.B.	1st Jan. 1830.
General Sir Edward Barnes, G.C.B.	10th Jan. 1832.
Gen. Lord William H. C. Bentinck G.C.B.	15th Oct. 1833.
Lieut-General the Hon'ble Sir Henry Fane, G.C.B.	5th Sept. 1835.
Major-General Sir Jasper Nicolls, K.C.B.	7th Dec. 1839.
General Sir Hugh Gough Bart, G.C.B. (afterwards Lord Gough)	8th Aug 1843.
General Sir Charles James Napier, G.C.B.	7th May 1849.
Gen.-Sir William Maynard Gomm, K.C.B.	6th Dec. 1850.
General the Hon'ble George Anson	23rd Jan. 1856.
Lieut-General Sir Partick Grant, K.C.B. (Officiating)	17th June 1857.
General Sir Colin Campbell, G.C.B. (afterwards Lord Clyde)	13th Aug. 1857. 4th June 1860.
General Sir Hugh H. Rose, G.C.B.	
Gen. Sir William Rose Mansfield, K.C.B.	23rd March 1865
General Lord Napier of Magdala, G.C.B., G.C.S.I.	8th April 1870.
General Sir Fred P. Haines, K.C.B.	10th April 1876.
General Sir Donald M. Stewart, K.C.B., C.I.E.	8th April 1881.
General Sir Fred S. Roberts, V.C., G.C.B., C.I.E.	28th Nov. 1885.
General Sir George S. White, V.C., G.C.I.E., K.C.B.	8th April 1893.
Lieut-General Sir Charles Edward Nairne K.C.B.	20th March 1898 (Provisional)
General Sir W. S. A. Lockhart, G.C.B., K.C.S.I.	4th Nov. 1898.
General Sir A. P. Palmer, K.C.B.	19th March 1900
General Viscount Kitchener of Khartoum, G.C.B., O.M., G.C.M.G.	28th Nov. 1902.
Gen. Sir O' Moore Creagh, V.C., G.C.B.,	10th Sept. 1909.

Name	Assumed Office
General Sir B. Duff., G.C.B., G.C.S.I., K.C.V.O., C.I.E.	8th March 1914.
General Sir C. C. Munro, G.C.S.I., G.C.M.G K.C.B.	1st Oct. 1916.
Gen. Lord Rawlinson of Trent, G.C.B., G.C.V.O., K.C.M.G., A.D.C.,	21st Nov. 1920.
Field Marshall Lord Birdwood of Anzac and of Totnes, G.C.B., G.C.S.I., G.C.M.G., G.C.V.O., C.I.E., D.S.O., D.C.L., L.L.D.	6th Aug. 1925.
Field Marshall Sir Philip W. Chetwode, G.C.B.; O.M., G.C.S.I.; K.C.M.G., D.S.O., D.C.L.	30th Nov. 1930.
General Sir Robert A. Cassels, G.C.B., G.C.S.I., D.S.O.	30th Nov. 1935.
General Sir C. J. E. Auchinleck	1940.
Field Marshall Sir Archibald Wavell	1941.
General Sir C. J. E. Auchinleck	1943.
continued up to	1948.

AFTER INDEPENDENCE

ARMY

General Sir R. M. Lockhart	1948.
General F. R. R. Bucher	1948.
General K. M. Kariappa	1949.
General Maharaj Rajendrasinhji	1953.
General S. M. Srinagesh	1955

NAVY

Vice Admiral Sir Edward Perry	1948.
Vice Admiral Sir C. T. M. Pizey	1951.
Vice Admiral S. H. Carlill	1955.

AIR FORCE

Air Marshall Ronald Ivelaw Chapman	1948.
Air Marshall G. E. Gibbs	1951.
Air Marshall S. Mukerjee	1954.

With effect from 1955 the posts of Commanders-in-Chief have been abolished and the Service Chiefs are now designated as Chief of Army, Navy, and Air Staff respectively.

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JOINING THE FORCES

ARMY (J. C. O.s and OTHER RANKS)

Besides commissioned officers, the Army has Junior Commissioned Officers (J. C. O.s), Non-Commissioned Officers (N. C. O.s), Sepoys or equivalent, Non-Combatants (enrolled) and boys.

Ranks of J. C. O.s and N. C. O.s, in order of seniority, are as under:

J. C. O.s—

Risaldar-Major/Subedar-Major
Risaldar/Subedar
Jemadar

N. C. O.s—

Dafadar-Major/Havildar-Major
Dafadar/Havildar
Lance-Havildar
Lance-Dafadar/Naik
Acting Lance-Dafadar/Lance-Naik

RECRUITMENT J. C. O.s and N. C. O.s

No direct recruitment is made to J. C. O., and N. C. O., ranks; they are promoted from N. C. O.s and Sepoys or equivalent.

J. C. O.s, N. C. O.s and Sepoys are also qualified to apply for selection as commissioned officers subject to the conditions laid down in A. I. 24/S/48, as amended from time to time. Main conditions are:

(a) Age limits— Personnel serving in the Army must not be over 24 years of age on the first day of the month in which the course is due to commence.

(b) Educational qualifications— Serving personnel must possess one of the following qualifications:

- (i) The Matriculation Examination of an Indian University.
- (ii) Indian Army Special Certificate Examination.
- (iii) Leading Aircraft Hand Examination.

(c) Candidates must be unmarried or childless widowers and will not be allowed to marry or re-marry while under training at the National Defence Academy.

Selected J. C. O.s are granted honorary ranks of Lieutenant or Captain.

Promotion in ranks is not given as a matter of course but is subject to selection. All soldiers are afforded equal opportunity for promotion.

SEPOYS

Recruitment is made in the lowest rank, i.e., as a sepoy or equivalent or as a boy. This class of personnel are known as combatants. Non-fighting personnel, such as barbers and washermen are also enrolled but they are known as non-combatants (enrolled).

Each recruit is enrolled in a particular branch of the Army, the establishment of which normally includes combatants of various categories, boys and non-combatants in varying numbers. All combatant recruits are first trained as fighting soldiers and then given trade training for the particular branch for which they are selected.

Enrolment of fresh recruits as combatants and others is carried out either by an officer of the recruiting staff or by Regimental Centres. Recruitment is organized as evenly as possible throughout India, recruiting officers being spread all over. Moreover, recruiting officers are constantly going round the country and their tour programmes are periodically advertised.

AGE LIMITS

Age limits for enrolment are as under:

Boys	Combatants	Non-Combatants (enrolled)
Over 14 and under 15 years	17 to 25 years	17 to 35 years

The upper age limit for combatants required for training as tinsmith, blacksmith, bricklayer, painter, saddler, tailor, carpenter, cook, equipment and boot repairer is 30 years.

Taking into account the functions of each arm, the standards of physical fitness have been laid down for the different classes, the average measurements being: height 5 ft. 1 in. to 5 ft. 6 ins., weight 105 to 120 lbs. and expanded chest 33 to 34 ins.

If after satisfying all these requirements a recruit qualifies in medical and educational tests, he is enrolled in the arm he elects to serve provided there are vacancies.

CATEGORIES OF TRADES

For the purpose of pay, combatants of various categories of fighting soldiers, tradesmen and clerks are grouped into eight different groups, each of which is divided into three or four classes. The following are the various categories of trades by groups:

GROUP A—Ammunition Examiner, Armament Artificer, Assistant Inspector in Gunnery, Block Inspector, Draughtsman (Estimating and Design), Driver (Railway Engine), Foreman (Signals), Laboratory Technicians, Lithographic Machine Erector, Master Gunner, Overseer (B. and R.), Machinist (Eaw M.), Engineers, Permanent Way Inspector, Radiographer, Serang, Surveyor (Trigonometrical), Technical Instructor (Fire Control) and Traffic Operator.

GROUP B—Artificer (Excavating Machinery), Assistant Security Officer A. O. C.-J. C. O., only, Blood Transfusion Orderly, Clerk (General Duty), Clerk (Store), Clerks G. D. (S. D.) A. S. C., Crystal Cutter Draughtsman (Lithographical), Dental Operating Room Assistant, Dental Technician, Dispenser, Draughtsman (Field), Draughtsman (Mechanical), Draughtsman (Railway), Draughtsman (Topographical), Electrician (A. F. V.), Electrician, Engine Artificer, Guard (Railway), Helio Worker, Instructor, A. S. C., Telecommunication Mechanic, Telegraph Mechanic, Instrument Mechanic, Instrument Mechanic (Teletype), Litho-machine Minder, Lithographer Prover, Laboratory Assistant, Line Mechanic, Masseur Mental Nursing Orderly, Operating Room Assistant, Operator (Cipher), Photo Writer, Photographer (Cartographic), Radio Mechanic, Sanitary Assistant Saw Doctor, Special Treatment Orderly, Storeman (Technical).

Surveyor (Field), Surveyor (Railway), Surveyor (Artillery), Surveyor (Topographical), Tool-maker, Vehicle Mechanic

GROUP C—Armourer, Battery Surveyor, Breeding Overseer/Line Overseer, Boiler-maker, Dipper Checker, Draughtsman (Signals), Driver (Marine, I. C.), Drive (Marine, Steam), Electrical Fitter (A. A. S. L.), Electrical Fitter (C. A.), Electrical Fitter (Sig.), Electrician (M. V.), Elector Depositor, Engine Fitter, Machinist (E. M. E.), (Excavating Machinery, Artillery), Operator (Excavating Machinery, Engineers), Operator (Keyboard and Lines), Operator (Switchboard), Operator (Wireless and Keyboard), Electro-depositor, Engine Fitter, Farm Overseer, Fitter, Fitter Caser, Fitter (Gun), Fitter (Petroleum), Fitter (Loco), Fitter (Railway Signals), Fireman (Loco), Grinder (Precision), Grainer and Guillotine Operator, Operator (Wireless and Line), Pattern-maker, Refrigeration Mechanic, Swar, Shipwright, Turner, Vehicle Mechanic, Watch-maker, Welder, Well-borer and Wagon-erector.

GROUP D—Blacksmith, Brick-layer, Carpenter and Joiner, Driver (A. F. V.), Engine Driver (Steam), Fitter (Vehicles), Gunner (A. F. V.), Gunner Driver (S. P. Artillery), Gunner Operator (S. P. Artillery), Intelligence Personnel, Lineman (Field), Lineman (Permanent), Lighterman, Lineman (Test), Mason, Master Baker, Moulder, Driver Operator, Driver (Plant and M. T.), Driver (Recovery), Driver (S. P.) Artillery), Operator (Boot-repair Machine), Operator (Fire Control), Operator (Laundry Plant), Operator (Type-repair Plant), Operator (Wireless A. F. V.), Operator (Wireless, Artillery), Operator (Wireless, Engineers), Painter and Decorator, Printer Compositor, Platelayer, Riveter, Stevedore, Sawyer, Technical Assistant, Tin and Coppersmith, Traffic Pointsman.

GROUP E—Cook (Hospital), Despatch-rider, Driver (Special Vehicle), Operator (Mechanical Handling Equipment), Farrier, Instructor (P. and R. T.), Postman (A.S.C./Postal), Master Butcher, Military Policeman, Saddler and Harness-maker, Storehand (Technical), Sapper Survey and Upholsterer.

GROUP F—All Infantry personnel except clerks G. D., Blacksmiths (unit), Carpenter (unit), Cook (unit), Equipment and Boot-repairers (unit) and Tailors (unit).

GROUP G— Baker, Bandsman|Bugler|Drummer|Piper/
Trumpeter, Butcher, Cycle Repairer (E. M. E.), Driver
(Mule Mountain Artillery), Dresser, Driver (A. Tpt.),
Driver (M. T.), Engine Attendant, Farm Manager/Assistant
Farm Manager/Farm Assistant (Military Farms Depart-
ment), Gunner, Height-taker (A. A.), Lamp Attendant,
Orderly (G. D.), Pasker (A. S. C./Postal), Plotter, Predictor
(Number), Range-taker (C. A.), Rider, Storehand (G. D.),
Stretcher-bearer, Sowar (G. D.) and textile-repairer.

GROUP H— Blacksmith (unit), Bricklayer (unit),
Carpenter (unit), Cook (unit), Equipment and Boot-repairer
(unit), Painter (unit), Saddler, Tinsmith and Tailor (unit).

A recruit after being enrolled joins a training centre of
his arm, where he is under training until qualified as a soldier.
The training varies from unit to unit but includes compulsory
military instruction and knowledge of the arms he has to
handle. After being passed fit as a recruit, he is enrolled
as a soldier. His training as a soldier continues there until
he passes certain proficiency tests. Every year a soldier has
to pass a certain compulsory qualification tests.

PAY AND ALLOWANCES

The rates of pay per mensem at different periods of
training and service in the various trade groups are as
follows:

BASIC PAY OF RECRUITS — ENTRY ONLY IN THE LOWEST RANK

	IN RUPEES PER MONTH.			
Boys	12-8	14-8 17-8
Normal Entry Rate	20	22-8 ..
Matric Entry Rate	35	.. ..

Rates of pay of trained soldiers (lowest rank) by
groups/classes are as shown below:

Group	Class 4	Class 3	Class 2	Class 1
	IN RUPEES PER MONTH.			
A	..	72 8 0	82 8 0	90 0 0
B	40 0 0	52 8 0	62 8 0	72 8 0
C	35 0 0	45 0 0	52 8 0	62 8 0
D	30 0 0	35 0 0	45 0 0	52 8 0
E	..	30 0 0	35 0 0	40 0 0

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Manufacturers of Tents, Durries and garments

F	..	25	0	0	30	0	0	35	0	0
G	..	25	0	0	30	0	0	35	0	0
H	..	25	0	0	30	0	0	35	0	0

An increment of Rs. 2-8 p. m., becomes admissible to other rank after 5 years of man's service and further Rs. 2-8 p.m., after 10 years of man's service.

In addition to the trained soldier's pay as shown above, Acting Lance-Dafadars, Lance Naiks and the N.C.O.s receive rank/appointment pay as under:

Acting Lance-Dafadar/Lance-Naik	..	Rs. 5 p.m.
Lance-Dafadar/Naik	..	.. 10 ..
Lance-Havildar	..	.. 15 ..
Dafadar-Havildar	..	.. 20 ..
Dafadar/Havildar holding the appointment of Squadron Dafadar-Major/Company Havildar Major or Squadron Quartermaster Dafadar/Company Quartermaster Havildar	..	25 ..
Dafadar/Havildar holding the appointment of Regimental Quartermaster Dafadar/Battalion Quartermaster Havildar	..	.. 27-8 ..
Dafadar/Havildar holding the appointment of Regimental Dafadar Major/Havildar of Regimental Dafadar Major/Havildar-Major	..	.. 30 ..

GOOD SERVICE PAY

In addition to basic pay shown above, Good Service Pay is admissible to N.C.O.s at the following rates :—

Naik / Lance-Dafadar	Rs. 2-8 p.m. after 3 years' service as a Naik, Lance-Dafadar or Lance-Havildar and a further Rs. 2-8 p.m. after 6 years' service in these ranks/appointments.
Dafadar-Havildar	Rs. 2-8 p.m. after each period of 3 years' service as Dafadar/Havildar but limited to 3 such increments.

PAY J. C. O.'s

Rates of pay for J.C.O.s (other than J.C.O.s of the Special Medical Section A. M. C. and Veterinary Assistant Surgeons) are :

Group	Jemadar	IN RUPEES PER MONTH.	
		Risaldar-Subedar	Risaldar-Major/Subedar-Major
A	140 -5-155	180 -10-210	265
B	122½-5-137½	162½-10-192½	265
C	112½-5-127½	152½-10-182½	265
D	102½-5-117½	142½-10-172½	265
E, F, G & H	90 -5-105	130 -10-160	250

Pay of a J.C.O. granted honorary rank of Lieutenant is Rs. 400 p.m. and of a honorary Captain Rs. 500 p.m.

DEARNESS ALLOWANCES

The existing rates of dearness allowance which are admissible to enrolled personnel (excluding boys) are :

Up, to pay of	Rs. 50 p.m.	Rs. 17-8 p.m.
Pay between	„ 51 and 100 p.m.	„ 22-8 „
„ „	„ 101 „ 150 „	„ 25 „
„ „	„ 151 „ 200 „	„ 27-8 „
„ „	„ 201 „ 250 „	„ 30 „
„ „	„ 251 „ 300 „	„ 30 „

OTHER ALLOWANCES

Other allowances admissible to combatant personnel are :

- (a) Haircutting/Haircleaning and washing—Rs. 2 p.m. or services in lieu.
- (b) Clothing allowances—J.C.O./O.R./Boys — Rs. 5 p.m.

In the case of recruits and boys — Rs. 2-8 p.m. will be paid during the first six months and thereafter Rs. 5 p.m.

- (c) Expatriation allowance — When serving ex-India the rate of allowance for a sepoy or equivalent is Rs. 10 p.m. The rate is higher for higher ranks.

Free rations free issue of initial clothing, free accommodation, free water, conservancy, fuel and lighting and free medical treatment are provided .

Under the existing rules J.C.O.s, N.C.O.s, Sepoy or equivalent are entitled to an annual leave of 60 days with free conveyance to and from home. This leave can be accumulated up to 90 days. In addition they are also entitled

to casual leave up to 30 days in a year. The grant of annual leave in the first year of engagement is subject to the condition that the individual has at least 6 months' service including service as a recruit. In the case of boys the period of annual leave is 30 days which can be accumulated up to 45 days and also casual leave up to 30 days in a year.

All combatant recruits accepted for regular engagement are enrolled for a period of 15 years combined colour and reserve service. The period of colour service varies according to branch but the minimum period is 7 years.

Non-combatants are enrolled for an initial period of 5 years of colour service, with no liability for service in the reserve.

COMBATANT CLERKS

Combatant Clerks are enrolled for training as Clerk (General Duty). Clerk (General Duty) (Staff Duties).

They are given both military and clerical training after enrolment and no previous experience in clerical duties is a prerequisite for enrolment.

The terms and conditions of service, in brief, are :—

A. **Period of engagement.**— The normal period of engagement is for a continued period of 20 years combined colour and reserve, of which a minimum of 12 years is with the colours. Extension of colour service upto the total period of engagement and beyond is permissible subject to vacancies in the establishment.

B. **Age limit.**— Between 17 and 25 years at the time of enrolment.

C. **Physical standard.**— Candidates have to conform to certain prescribed physical standards of height, weight, and chest. They are also required to be medically and mentally fit in all respects. The minimum prescribed standard of measurements of height, weight and chest for enrolment in various Arms/Corps vary from class to class and area to area. The minimum standards are :—

Height 5 ft.

Weight 115 lbs.

Expanded chest with a minimum of 2" expansion 31 x 33

D. **Education.**— Minimum is Matriculation passed or equivalent with English and Mathematics.

E. Rank on enrolment.— Sepoy or equivalent.

F. Rates of pay.— The rates of pay given below are exclusive of allowances and concessions in kind to which a soldier becomes entitled from the date of enrolment. For purpose of pay Combatant Clerks are grouped into 4 classes, the highest class being 1 and the lowest 4. Rates of pay which a Combatant Clerk receives, from the date of enrolment and until he is classified as Class 1 trained soldier are as under :—

Matric Entry Rate Rs. 35/- — On enrolment.

Class 4 Rs. 40/- and Class 3 Rs. 52|8/- — On completion of requisite military and clerical training.

Class 2 Rs. 62|8/- — After two years' service in class 3.

Class 1 Rs. 72|8/- — After two years' service in class 2.

Advancement to higher classes is subject to passing the prescribed trade tests, and existence of vacancies in the authorized establishment.

The above rates are inclusive of Deferred Pay of Rs. 3/- p. m. which is paid to the individual :—

(a) On promotion to Junior Commissioned Officer's (J.C.O.'s) rank; (b) On grant of a commission as an Indian Commissioned Officer (I.C.O.); (c) On transfer to reserve; (d) On discharge or on proceeding on leave pending discharge.

Increments of pay.— An increment of Rs. 2|8/- p. m. after 5 years man's service and further Rs. 2|8/- p. m. after 10 years man's service.

G. Allowances.— In addition to pay and concessions in kind mentioned above a combatant clerk is entitled to the following allowances :—

- (i) **Dearness allowance.**— This is based on pay. The existing rates are Rs. 20 p. m. for those whose pay does not exceed Rs. 50 p. m. and 25 p. m. for those whose pay is between Rs. 51 and Rs. 100 p. m. and thereafter Rs. 27|8/- p. m.
- (ii) **Haircutting/Haircleaning and washing allowance.**— Free services or an allowance of Rs. 2 p. m. in lieu.
- (iii) **Clothing allowance.**— Rs. 2|8/- p. m. for 6 months and thereafter Rs. 5 p. m.

- (iv) **Expatriation allowance.**— When serving ex-India the rate of allowance for sepoy or equivalent is Rs. 10 p. m. The rate is higher for higher ranks.
- (v) **Compensatory allowance.**— Compensatory allowance at half the civilian rates as and where admissible.

H. Liability for service.— Recruits will be enrolled as combatants under the Army Act with general service liability, i.e., they will have to go wherever ordered by land, sea or air and caste usage will not be allowed to interfere with military duties.

I. Leave.— In accordance with the present rules a soldier is entitled to 60 days annual leave with free passage to and from home, subject to the condition that he has at least 6 months service including service as a recruit. This leave can be accumulated upto 90 days. He is also eligible for casual leave upto the extent of 30 days in a year.

J. Pension.— Pension will be admissible under the normal rules.

Prospects of promotion.— All promotions in higher ranks of Non-commissioned Officers (N. C. Os.) are made from Sepoys. The N. C. O. ranks/appointments are Acting Lance Dafadar/Lance Naik, Lance Dafadar/Naik, Dafadar/Havildar and Dafadar Major/Havildar Major. Rank/appointments pay ranging from Rs. 5 p. m. to Rs. 30 p. m. is admissible to soldiers who are promoted N. C. Os. Naik-Lance Dafadar and Naik holding appointment of Lance Havildar, also get Rs. 2|8|- p. m. as Good Service pay after 3 years service. A further Rs. 2|8|- p. m. (G. S. pay) is admissible after 6 years service in these ranks/appointments. Dafadar/Havildar also gets G. S. pay at Rs. 2|8|- p. m. after each period of 3 years service as a Dafadar/Havildar but limited to 3 such increments. Junior Commissioned Officers (J. C. Os.) are promoted from qualified and selected N. C. Os. The pay of a J. C. O. Clerk starts from Rs. 122|8|- p. m. and raises upto Rs. 265 p. m. according to rank. Ranks of J. C. Os. are Jemadar, Risaldar/Subedar and Risaldar Major/Subedar Major. Selected J. C. Os. are granted honorary ranks of Lieutenant or Captain. Honorary lieutenants receive pay at Rs. 400 p. m. and honorary Captains at Rs. 500 p. m.

OTHER BADGES OF RANK

ARMY



SUBEDAR - MAJOR



SUBEDAR



JEMADAR



HAVILDAR



NAIK



L/NAIK

NAVY



CHIEF PETTY OFFICER



PETTY OFFICER



LEADING RATE

AIR FORCE



MASTER WARRANT OFFICER



WARRANT OFFICER



FLIGHT SERGEANT



SERGEANT



CORPORAL

Promotion in rank is not given as a matter of course, but is subject to selection. Soldiers who conform to the prescribed standards are also permitted to apply for selection as commissioned officers without appearing in the U. P. S. C. examination. Those who join as combatant clerks get better chances for being selected as commissioned officers, in view of the higher age limit and the military training imparted to them to compete for a commission.

ARMY TRAINING CENTRES

ARMoured CORPS CENTRE. The Armoured Corps centre and school was established in June 1948 by the amalgamation of the various Armoured Corps established in India. Besides training recruits, it undertakes the training of regimental instructors, young officers, squadron commanders and regimental commanders of the Corps.

SCHOOL OF ARTILLERY :— The School of Artillery provides instruction in a wide range of subjects, including training in the field, anti-tank, anti-aircraft and coast artillery branches.

SCHOOL OF MILITARY ENGINEERING :— The School of Military Engineering imparts basic technical and specialized Corps training (less advance survey) to officers, J.C.O.'s and other ranks of the Corps of Engineers as also to civilian gazetted officers and subordinates of the Military Engineer Service. The training needs of instructors in field engineering for other arms are also catered for. In addition, the School trains young officers of the Corps of Engineers, the Corps of signals, and the Corps of Electrical and Mechanical Engineers in basic Engineering courses of about two years' duration, the standard of which is equivalent to an engineering degree course.

All this training is given in the Technical Training Wing of the School, which consists of engineering and electrical and mechanical engineering sections. The School also has an Engineering Research Wing which carries out research and experimental work on subjects in which the Corps of Engineers is vitally interested.

SCHOOL OF SIGNALS :— The School of Signals was formed out of the Signal Training Centre (B) The School is primarily concerned with the task of imparting basic technical

training to young officers and advanced technical training in tele-communication and signal tactics to personnel of the Corps of Signals. It also trains officers and other ranks as instructors in technical subjects.

ARMY SIGNAL SCHOOL :— The Army Signal School trains certain officers J.C.O.'s and other ranks of all arms as instructors in regimental signalling. It also makes a constant study of the inter-communication lay-out within the regiments battalions with a view to effecting improvements where necessary.

INFANTRY SCHOOL :— The Infantry School comprises a Weapons Wing and a Tactical Wing. At the former, officers and men of all arms in the Army are trained as weapon instructors and made to learn the technique of close-quarter battle. At the latter, Officers of all Arms, J.C.O.'s and N.C.O.'s are trained in the tactical handling of infantry units. The School also conducts courses in the tactical and administrative handling of units and sub-units for junior commanders and senior officers of all corps in the Army.

SERVICE CORPS SCHOOL :— The Army Service Corps School trains officers J.C.O.'s and N.C.O.'s of the Service Corps in their corps duties. The principal subjects in which training is given are organisation and administration, animal transport, mechanical transport and supplies.

ARMY ORDNANCE SCHOOL :— The Army Ordnance School imparts specialized corps training to all officers, J.C.O.'s and other ranks in the identification handling, storage, care, custody and preservation of all items, including ammunition and explosives, stocked by Ordnance.

E. & M. ENGINEERING SCHOOL :— The Electrical and Mechanical Engineering School technical training (maintenance, repairs, and overhaul) in all mechanical, electrical, wireless, and optical equipment in use in the Army to officers, J.C.O.'s and other ranks of the Corps of Electrical and Mechanical Engineers. The Institution also undertakes the training of technical instructors at the instance of Army H. Q.

REMOUNTS, VETERINARY AND FARMS CORPS CENTRE :— The Remounts, Veterinary and Farms Corps Centre and School is responsible for training equitation instructors for the Army and giving them expert training in horsemanship and stable management. Courses are held for all arms of the Army in veterinary first-aid and animal hygiene to prevent accidents and diseases among animals. The School also turns out farriers for the entire Army.

INTELLIGENCE TRAINING SCHOOL : The Intelligence Training School and Depot, which was formed in 1948 after partition, train officers for Grade III intelligence staff appointments at formation headquarters and for other intelligence appointments. It also trains J.C.O.'s and other ranks for employment at formation headquarters or in regimental intelligence and field security sections.

SCHOOL OF PHYSICAL TRAINING :— The Army School of Physical Training is located in Eve's Estate in Poona. The Commander of the School is also the Inspector of Physical Training and is responsible to the Director of Military Training for the efficiency of physical training carried out at the school and in units of all corps on the lines laid down by Army H. Q. The School, among other things, trains officers of all arms corps as regimental physical supervisors and J.C.O.'s and N.C.O.'s as regimental assistant instructors. It also holds special boxing and athletic courses.

Besides training officers sent by the regiments, the School which was shifted to Poona from Ambala after partition, trains instructors both for the Army and Air Force. Formerly, it also used to train instructors for the Navy, which now has its own establishment.

Besides the above training centres, there are the Armed Forces Medical College, the Army Educational Centre and School, the Army Air Transport Support School, the School of Mechanical Transport, the Corps of Military Police Centre and School, and the School of Music.

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NAVY

Life in the Navy is hard and adventurous, healthy and full of fun. Those who join the Navy can see many parts of the world as ambassadors carrying the message of their country and enhance her prestige. Their ship becomes their home on sea and they learn to live with others as a happy family, by forming sea fraternity. During peace they train themselves in multifarious duties and prepare to fight in the case of war.

Facilities for outdoor as well as indoor recreational activities exist and those who join the Navy are encouraged to take full advantage....duty permitting to keep themselves healthy and strong physically and mentally.

Free food, clothing and medical attendance are available besides good pay, dearness allowance, kit up-keep allowance and good conduct pay. The work is interesting and congenial and useful to the country and of national importance.

ENTRY AND TRAINING OF BOYS

Recruitment of boys in the Indian Navy is carried out every second month and is at present open in the following branches:—

- (a) Seaman; (b) Communications; (c) Stoker; and
- (d) Electrical. Boys are neither officers nor Officer Cadets.

QUALIFICATIONS

Candidates must be:—

- (a) Educated upto 6th Jamat or above. (b) Between $15\frac{1}{2}$ to $16\frac{1}{2}$ years of age on the day of enrolment. (c) Physically and medically fit in all respects. (d) Eye sight $6\frac{1}{6}$ in each eye, on average not less than 5ft. in height, 29" in mean chest and 94 lbs. weight, capable of attaining 5ft. 4" height, 33 $\frac{1}{2}$ " chest and 115 lbs weight on reaching the age of 18 years. (e) Eat food prepared by cooks of any community which will be served and eaten in a common mess. Two kinds of foods are served in the Navy.....vegetarian and non-vegetarian; and boys are allowed their

own choice. The usual meat supplied is mutton and poultry. (f) Prepared to serve in any part of the world and obey the service discipline and rules and regulations as may be laid down from time to time. (g) Citizens of India or Gurkhas (subjects of Nepal) or subjects of Sikkim or persons who migrated from Pakistan on or after 19th July, 1948 with the intention of permanently settling down in India (even though they may have failed to register themselves in the prescribed manner) or subjects of Portuguese or former French possessions in India.

Candidates who fulfil the above conditions have to apply to the nearest Recruiting Officer. They are then called up for a simple educational test in language and arithmetic. The language paper is set in English or in Hindi (Devnagri Script) arithmetic paper set both in English and Hindi (Devnagri Script).

SUPPORTING DOCUMENTS

Candidates who are called up for written test are required to produce—(a) the original documentary proof of their date of birth and educational qualifications. (b) Written consent of their parents or legal guardian for their enrolment as boys.

Candidates who are called up for written test and medical examination are eligible for free conveyance and subsistence allowance at the rate of Re. 1/- per day during the period of journey and 12 annas per day during period of halt upto the date preceding that of enrolment in the case of candidates who are accepted and upto and including the date of rejection in the case of rejected candidates. Candidates who are rejected on medical grounds are allowed free conveyance by rail back to their homes.

Selected candidates are sent on railway warrant at Government expense, in batches, to the Boys' Training Establishment at I.N.S. CIRCARS, Vizagapatam. Pay and allowances are admissible from the date of enrolment.

Boys are enrolled for 10 years on active service to count from the date of attaining 17 years of age or being advanced to man's rate which is later followed by 10 years in the Reserve, if required. At the end of 10 years ratings with good record are allowed to continue for a further 10 years or more on active service if they wish to complete time for pension.

On arrival at the I.N.S. CIRCARS, boys report to the New Entry Camp. They are issued with Naval uniform and bedding. This is free of charge and the boys have to maintain it from kit up-keep allowance.

Boys remain in the New Entry Camp for about 10 weeks during which time they are schooled in the elements of parade training, physical training, naval discipline and cleanliness. Depending upon their aptitude and requirement of the Service boys are then selected for training in different branches of Service, Seamen, Stoker and Electrical. On completion of the New Camp Entry routine, boys start their naval training in their respective branches in the Main Camp for a period of 50 weeks. On successful completion of shore training, which lasts about 15 months and provided the boys are 17 years of age they are advanced to Men's rate as Ordinary Seamen or its equivalent on other branches and are drafted to sea. A proportion of vacancies of Artificer Apprentices is filled every six months from amongst boy trainees who fulfil the prescribed conditions and are successful in the written examination therefor.

Advancement is the promotion of ratings from one rate to another. For further advancement from O. D. Rate ratings must pass the prescribed examinations, be recommended by the Commanding Officer, have served for a certain qualifying period, have continuous record of very good conduct for a specified period and possess a specified period of sea service. Opportunities also exist for ratings of outstanding qualities to get promoted to Commissioned Rank as Branch List Officers or Acting Sub-Lieutenants, subject to passing certain professional and other examinations.

I. N. DOCKYARD APPRENTICES— QUALIFICATIONS ETC

Candidates must be natural born citizens of the Indian Union or in whose favour a certificate of eligibility is issued. They must not be less than 16 years and more than 19 years of age at the time of joining. Evidence of age and certificate of character, in original has to be produced at the place and time of interview.

Candidates must be in good health and be sound in constitution and be free, as far as can be ascertained from any disease or defect that would render them unfit for duties

as apprentices. His hearing must be good and sight of both eyes must be 6/9, capable of correction by spectacles. Medical Examination according to standards notified to recruiting medical authorities by Naval Headquarters is carried out prior to admission for the written examination which is held at the various recruiting offices. Subjects for examination are Mathematics (100 marks) English (100 marks) General Knowledge (100 marks). Papers are set in English and candidates have to obtain 55 per cent marks in each subject and an aggregate of 40 per cent.

Successful candidates are required to appear before an interview board. Interviews are held at Jullunder, Ambala, Ajmer, Lucknow, Calcutta, Patna, Bombay, Poona Bangalore and Nagpur. If successful, the candidates are required to proceed to Bombay direct from the place of interview and should come prepared accordingly. Candidates called for interview are paid class III railway travel at Government expense, from the nearest railway station to the place of interview, or to Bombay in case of successful candidates and back to their homes in respect of those unsuccessful. Payment in cash is made on completion of interview and on production of railway receipt.

Candidates selected are bound to serve in I. N. Dockyard for a period of 8 years after successful completion of their apprenticeship. No candidate is entered unless his parent or guardian is able and willing to undertake the duty of the second party to the indenture for support etc., of his son or want during his apprenticeship. In deserving cases, if applied for and on the recommendations of the Board of Interview this sum can be paid Rs. 100 on acceptance and the balance in five monthly instalments of Rs. 20 which is deducted from the wages. Bona fide refugees may pay the whole amount in such instalments. The sum is refunded on successful completion of course. If an apprentice fails to complete the 8 years in Dockyard for reasons within his control he and/or his guardian is liable to make to the State all the expenses incurred by the Government on his training.

PRACTICAL TRAINING

Practical training in the Central Establishment for the first two years in Fitting, Welding, Electrical, Wood working, Pattern making, Welding, Pipe and plate work, Moulding,

Electrical, Black and coppersmithing, Pattern making, Moulding and Turning. Practical tests are held at the end of each of the above sessions of training.

On completion of the first two years training in the Central Training Establishment apprentices go to the departments either selected by them or to which they are best suited as directed by the Dockyard authorities. They spend further two years in the Dockyard.

On the results of the final school examination at the end of the 4th year selected apprentices are given six months experience in their respective Drawing Offices followed by another six months in specialising. Those not selected for Drawing Offices work spend the whole year in specialising in particular section of their respective branches.

PART B. (THEORETICAL)

Concurrent with their practical training apprentices are given class room instructions in school and technical subjects for four years. Subjects taught at the school to all apprentices are English, Practical Mathematics, Applied Mechanics, Indian History, Heat and Metallurgy, Electricity, Mechanical Drawing.

Engineering Apprentices, Steam and Heat Engines, General Engineering. Electrical Apprentices; Electrical Engineering— Shipwright Apprentices; Theoretical Naval Architecture, Laying off.

Professional instruction is given in Marine Engineering, Electrical Engineering and Naval Architecture to those apprentices who attend the 3rd and 4th years in upper classes. Books are supplied on loan and all losses have to be made good by the apprentices concerned. Drawing instruments, a list of which is given, are provided by the apprentices themselves.

Throughout their apprenticeship they are to behave well and abide by the rules and regulations of the Dockyard generally and of the school in particular. They are forbidden to join any trade or other type of Union and take part in any political debates or activities within the Dockyard premises or elsewhere.

WAGES

Apprentices are paid Rs. 35/- (1st and 2nd year), Rs. 40/- (3rd and 4th year) Rs. 45/- (5th year). In addition they are paid Rs. 40/- Dearness Allowance, Rs. 7|8, Compensatory Allowance, Rs. 10/- House rent. (This has to be forgone if barrack accommodation is provided).

Apart from closed holidays apprentices are granted 3 weeks leave without pay once a year. This coincides with annual competitive examinations.

On completion as apprentices they are employed in the Dockyard as technicians and are given full rates of pay in force at that time. Selected technicians are given the posts of supervisors in Dockyard.

SYLLABUS FOR ENTRANCE EXAMINATION

Mathematics— Maximum Marks 100—Time 2½ hours.

(a) Vulgar and decimal fractions, ratio and proportions, percentages, averages, profit and loss, simple and compound interest, stocks and shares, square roots of whole numbers and decimals, areas and volumes of regular figures.

(b) Algebraic addition, subtraction, multiplication, division, simple equations, L.C.M., H.C.F., fractions, simultaneous equation, involution, evolution, factors, simple quadratic equations.

(c) Knowledge of the property of the angles at a point, parallel lines, angles of triangle, congruency of triangles, properties of angles, sides and diagonals of a parallelogram, rhombus, rectangle, square, theorem of Pythagoras, the simple properties of circles.

(d) Bisection of an angle and a straight line: Construction of perpendiculars, parallels, triangles, tangents to circles inscribed and circumscribed circles of triangles, trapeziums.

English—Maximum Marks 100—Time---2 hours.

(a) Composition to test a candidate's ability to write simple and grammatically correct English.

(b) A simple prose passage to be condensed by the candidate, with the object of testing comprehension and expression.

(c) Uses of simple words having similar pronunciations but different meanings, and common phrases.

General Knowledge and Science— Maximum Marks 100

Time 2½ hours.

(a) Geography of the world with particular reference to India.

(b) Indian History and current affairs.

(c) Quantity of matter in a body. Comparison of bodies by weighing. The use of a common balance and a spring balance. Idea of time. Idea of force from common experience. Ideas of work and energy as applied to simple machines, levers and pulleys. Determination of density. The Barometer. The Thermometer. Simple chemical and physical properties of common substances such as air, water, chalk, lime, coal, salt, oxygen, nitrogen and hydrogen.

ARTIFICER APPRENTICES

Artificer Apprentices in Navy are recruited for training either as Engine Room Artificers, Shipwright Artificers, Electrical Artificers, Ordnance Artificers or Aircraft Artificers. After training the artificers rank as senior ratings. They are neither officers nor officer cadets.

Candidates have to apply on prescribed form to the nearest Recruiting Officer showing the date of birth and date of passing the matriculation or a higher examination besides other details required. Recruitment takes place twice a year the dates of which are duly notified in the press.

Candidates must be between 15 and 17½ years of age, must have passed Matriculation or equivalent or above, with Science and Mathematics (Candidates without Science as one of their subjects in Matriculation but having knowledge of Science upto the Matriculation standard may also be considered), must be physically fit for service in any part of the world, on an average they should not be less than 5 ft. in height, 29" in mean chest, 94 lbs. in weight, capable of attaining 5 ft. 4" in height, 33½" in chest and 115 lbs. weight on reaching the age of 18 years.

Candidates fulfilling the qualifications of age and education are called for medical examination and written test in English, Mathematics and General Science. Papers have to be answered in English. They are required to produce original proof of their date of birth, educational

qualifications as also written consent of their parents or legal guardians. Candidates are allowed free conveyance by rail to the place of the examination and back to their homes as also sustenance allowance at twelve annas per diem for the duration of their halt.

On the result of the written examination, candidates are called for further tests, interview and final selection at I.N.S. SHIVAJI at Lonavala. Successful candidates remain at I.N.S. SHIVAJI and are enrolled as artificer apprentices. For journeys from their homes to Lonavala candidates are allowed free conveyance by rail from their homes to the nearest Recruiting Office and railway warrants from Recruiting Office to Lonavala. In addition they are allowed subsistence allowance at the rate of Re. 1/- per diem for the duration of the journey. During their stay at Lonavala they are eligible for free board and messing. Unsuccessful candidates are issued railway warrants for journey back to their homes. No subsistence allowance is admissible for return journeys.

Normal period of training is four years which is divided into eighteen months Basic Course followed by two and a half years of specialist training in a particular branch. During Basic Course all apprentices are given common training. At the end of this they are allocated trades which is dependent on number of vacancies and individual aptitude. During specialised training the Electrical Artificers are at Electrical School in VILSURA, Shipwright Artificers at Shipwright Schools, Bombay, Engine Room and Ordnance Artificers continue at I.N.S. SHIVAJI. Apart from practical training there is good deal of academic and scholastic studies. On completion of training in shore establishments they are appointed to sea going ships to acquire practical training to serve as Artificers.

PAY AND ALLOWANCES

During training :—On entry, Rs. 27-8, 2nd year, Rs. 32/-, 3rd year, Rs. 37|8/-, 4th year, Rs. 42|8/- (Artificer Apprentices are allowed dearness allowance at the rate of Rs. 20½ per month during this period).

After training and as Artificers Class V:—Rs. 67/- with Rs. 25/- as dearness allowance.

After Training: — Acting Artificer IV Class, Rs. 95/- plus (D.A.); Artificer IV Class, 110-5-115 plus Rs. 27|8/- (D.A.) Artificer III Class 125-5-135 plus Rs. 27|8/- (D.A.), Artificer II Class, 145-5-165 plus Rs. 27/- to 30/- (D.A.)

Artificer I Class, Rs. 175-5-190 plus Rs. 30|- (D.A.), Chief Artificer Rs. 210-10-240 plus Rs. 32|8|- (D.A.).

Concessions in kind include free rations, free issue of initial clothing, free medical aid, accommodation, fuel water and lighting.

Other allowances are :—Compensatory Allowance Rs. 2|8 to Rs. 1|12|- for Bombay and Calcutta, Rs. 1|8|- Rs. 5|- P.M. for Madras, Hyderabad, Ahmedabad, Delhi and Kanpur.

Good conduct pay Rs. 3|- to Rs. 9|- for 1 to 3 badges. Kit up-keep allowance Rs. 12|8 to Rs. 13|8|- P.M. Expatriation allowance (for ratings serving overseas or in ships operating beyond certain limits only), Rs. 5|- to Rs. 20|-. (This will not run concurrently with compensatory allowance) Hair Cutting, cleaning and washing allowance. Rs. 2|- P.M. Money in lieu of married accommodation (Ag. ERAIV and above) Rs. 6|- to Rs. 16|- P.M.

Ration allowance Rs. 2|- when travelling on duty or on leave. Artificers are allowed thirty days leave during training and sixty days annual leave free passage to and from home. In addition there is casual and sick leave. This is all subject to exigencies of Service.

Apprentices are enrolled for ten years on active list to count from the date of completion of apprenticeship followed by ten years in there serve, if required. Artificers with good record are allowed to continue for further 10 years on the active list if they wish to complete time for pension.

Artificer apprentices are advanced to Artificer 5th Class after their training ashore and drafted to sea. Highest advancement is Chief Artificer for which they must —(1) pass the prescribed examinations and obtain certificates of competency where necessary; (2) be recommended by the Commanding Officer; (3) have served for certain qualifying period; (4) have continuous record of very good conduct for a specified period and (5) possess a specified period of sea service.

Opportunities exist for outstanding ratings being promoted to Commissioned Ranks as Branch List Officer or Acting Sub-Lieutenants. If within age and if recommended by the Commanding Officers and if otherwise eligible they are also permitted to sit for the U.P.S.C. examination for entry into the officer cadre in the Army, Navy, Air Force but must make Navy as their first choice.

AIR FORCE

NATIONALITY :— A National of Indian Union by Birth or Domicile.

AGE :— 17 to 20 years.

EDUCATION :— Passed Matriculation or Equivalent examination. Science and Mathematics essential for technical trades. Elementary knowledge of English for Group V.

PHYSICAL STANDARD :— Minimum weight : 105 lbs., Height : 60" Chest 30-32" (Height required for I.A.F. Police G.T.I. and Musician: 66" and for M.T.D. 65") General health must be full normal standard.

SELECTION :— Trade and Group will be allotted according to the results of appropriate tests and interview at the Recruiting Office. Previous experience in any one of the following instruments is preferred for recruitment as Musicians: (1) Clarinet; (2) Flute; (3) Oboe; (4) Bassoons; (5) Saxophone; (6) Trumpet; (7) B Flat bars; (8) Trombone.

TERMS OF ENGAGEMENT :— A candidate must be prepared to serve for a minimum period of NINE years Regular Service followed by Six years in the reserve.

PROMOTION :— Promotion is by length of service and ability. Each step in promotion brings extra pay and privileges. Airmen passing out from the Training Centre with 80% or above marks get the rank of leading aircraftman (L.A.C.).

PAY AND ALLOWANCE :— (a) UNDER TRAINING : Group I, II, III & IV; Pay Rs. 36/- plus Rs. 22/8/- as D.A. per month, Group V; Rs. 28/- plus Rs. 22/8/- as D.A. per month. PLUS Free Training, Food, Clothing, Accommodation, Medical Treatment etc.

IN RUPEES PER MONTH AFTER TRAINING

Rank	Group I	Group II	Group III	Group IV	Group V
AC. 2	80	60	48	42	32

AC. 1	90	70	52	52	34
LAC.	105-110	80-85	55-60	55-60	38-44
CPL.	130-140	100-110	65-75	65-75	56-68
SGT.	160-175	125-140	90-105	90-105	90-105
F/SGT.	190-210	160-175	120-135	120-135	120-135
W. O.	230-260	205-235	150-165	150-165	150-165
M. W. O.	270-300	245-275	175-205	175-205	175-205

PLUS

Clothing Allowance of Rs. 88/12 per annum (paid quarterly) Badge pay, Dearness Allowance, Compensatory Allowance etc., Free Food, Accommodation, Medical Treatment, pension benefit and healthy active enjoyable life.

LEAVE :— 60 days annually, with free Travelling facilities.

TRADE GROUPS :— You will have noticed from the pay scale that what you earn in the IAF depends not only on what rank you hold but also what trade group you are in. The list of Trades is given below.

GROUP I :— Blacksmith and Welder; Carpenter I; Coppersmith and Sheet Metal Worker; Electrician I; Fitter Armourer; Fitter M. T., Fitter I; Fitter II-E; Fitter II-A; Instrument Repairer I; Machine tool Setter and Operator; Photo Mechanic; Wireless Operator Mechanic; Radar Mechanic.

GROUP II :— Armourer II; Carpenter II; Electrician II; Flight Mechanic 'A'; Instrument Repairer II; Flight Mechanic 'E'; M. T. Mechanic; Photographer; Safety Equipment Worker; Turner; Wireless Operator; Mechanic II; Radar Operator; Airfield Safety Operator; Metereological Assistant.

GROUP III :— Clerk Accounting; Clerk Pay Accounting; Clerk Equipment Accounting; Clerk General Duties; Equipment Assistant; R. T. Operator and Telephonist; Mechanical Assistants; Clerk Senior Duties.

GROUP IV :— Ground Training Instructor; IAF Police; Fabric Worker.

GROUP V :— Musician; M. T. Driver; Catering Assistant; Aircraft Hand General Duties.

TRAINING :— Technical Trades; One Year. Non-Technical Trades; 40 weeks. Selected candidates will be sent to respective Ground Training Schools at Bangalore or Tambaram or Poona. They must carry with them the following civil clothes : (i) Two pairs of slacks (ii) Two pairs of shorts (iii) Two shirts with long sleeves (iv) Shaving materials etc. (v) pair of shoes.

CERTIFICATES :— Candidates should produce at the time of interview the following Certificates in ORIGINAL (i) Matriculation or School Leaving Certificate in proof of age and qualifications (ii) A Certificate of good moral character from a Gazetted Officer of the Central or State Government or from a Stipendiary Magistrate. OR A Certificate from the Head of the School or College in which last studied. (iii) Written permission from the Head of the Department if employed in Government Service or if have resigned or been dismissed from a Government Department written evidence as to reason of discharge.

IMPORTANT NOTES FOR AIRMEN RECRUITMENT

(1) Terms and Conditions of Service viz : Age limit, Educational qualifications, Physical Standard etc., laid down above can in no case be relaxed.

(2) Candidates should notify Air Force Recruiting Officer if they have ever applied for enrolment into the IAF and if the answer is in the affirmative, they should give details as to place, date and results of the tests and reasons for rejection.

(3) Candidates previously arrested, prosecuted or convicted for any offence should not report; but may apply to Recruiting office giving details for consideration.

RECRUITING CENTRES

ARMY

Jullundur	Kolhapur	Secunderabad
Ambala	Rajkot	Vizagapatam
Amritsar	Aurangabad	Ernakulam
Srinagar	Amraoti	Calcutta
Palampur	Lucknow	Patna
Ferozepur	Meerut	Ranchi
Rohtak	Ajmer	Cuttack
Delhi	Gwalior	Shillong
Jammu	Banaras	Asansol
Bikaner	Bareilly	Berhampur
Poona	Lansdowne	Muzaffarpur
Bombay	Almora	Silchar
Belgaum	Kotah	Kunraghat
Nagpur	Bangalore	Ghoom
Jabalpur	Madras	
Satara	Trichinopoly	

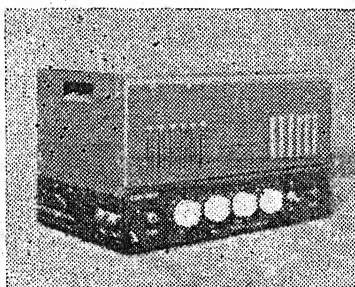
NAVY

Jullundur	Gwalior	Satara
Srinagar	Lansdowne	Amraoti
Delhi	Berhampur	Bangalore
Kotah	Shillong	Vizagapatam
Meerut	Belgaum	Ferozepur
Almora	Nagpur	Ambala
Asansol	Kolhapur	Lucknow
Bombay	Trichinopoly	Banaras
Ranchi	Palampur	Cuttack
Secunderabad	Jammu	Calcutta
Madras	Jodhpur	Poona
Amritsar	Bareilly	Rajkot
Rohtak	Patna	Jabalpur
Ajmer	Muzaffarpur	Ernakulam
	Silchar	Aurangabad

AIR FORCE

New Delhi	I.A.F. Station, Safdar Jung.
Ambala Cantt.	I.A.F. Wing, 17 Majumdar Lines, Church Road.
Kanpur	I.A.F. Station, Chakeri.
Calcutta-20	No. 1 Gokhale Road.
Bombay-1	A. F. I. Building, Hospital Lines, Dhobi Talao.
Tambaram	No. 2 T.G.S., I.A.F.
Bangalore Cantt.	H. Q. Training Command (Unit), I.A.F., Infantry Road End, High Ground.
Poona	No. 2 Wing, I.A.F., Station.
Jodhpur	No. 2 Air Force Academy, I.A.F., Station.
Pulgaon	I.A.F., Station.
Jorhat	I.A.F., Station.
Manauri	No. 4 Equipment Depot, I.A.F., Station.

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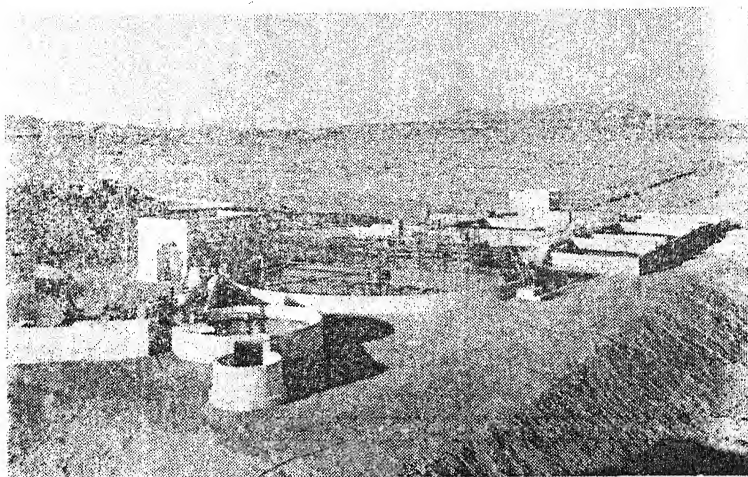
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NATIONAL DEFENCE ACADEMY

INDIA'S UNIVERSITY OF ARMS

Nestling in the foot-hills off the Sahyadri that form the Western watershed of the Mutha valley, within an easy twelve miles drive from Poona, the two hundred years old administrative seat of Peshwa rule, is the site of the National Defence Academy, a new nursery of the Indian Armed Forces, better described as India's University of Arms the West Point of India. From this cradle of the Defence Services, a unique institution, the only one of its kind in the world, where military training is imparted jointly to the cadets of Army, Navy and Air Force, now issue forth young officers, who form the future protective wings of the country who will hold and enhance on the world wide reputation of distinction earned by the Indian Armed Forces in all theaters of wars hitherto fought.

THE ACADEMY ESTATE

The Academy estate comprises a shallow, elongated trough, nearly seven thousand acres in extent, a free gift by the Government of Bombay. The National Defence Academy which was hitherto known as the Joint Services Wing, is studded like a bright jewel in a picturesque setting of the emerald ranges of the Western ghats and waters of mile wide Khadakvasla lake ripple through its undulated velvety grounds. Also the Academy lies within the time worn dusky shadows of the battlements of the famous Sinhaghad fort which stand over-poweringly on the summit of a hill on the south bank of the Khadakvasla lake, reminiscent of the days of Maharatha chivalry. The whole wide panorama cut across by two valleys with a high ground in the centre and two ridges on either side has been exploited to the maximum advantage in laying out buildings which maintain a balance with the

natural settings. Indeed the planning, layout and architecture of this magnificent undertaking, completed at the cost of seven crores of rupees, bears the imprint of a master mind. In the simple yet eloquent beauty there is neatness, orderliness and massive impressiveness which flows with the lines and patterns of the rugged hills as well as melts with the soft beauty of quiet and tender surroundings.

THE ROMANTIC HISTORY

The birth and development of the National Defence Academy has been romantic in many ways. Towards the end of the last war, the Sudan Government, in appreciation of gallantry and valour of the Indian troops in Western Desert and elsewhere made a spontaneous gift of £100,000 towards a suitable war memorial in India. After partition, out of the Sudan gift £70,000 came to India's share.

Following the Sudan Government's offer the Government of India immediately set about examining the form that the Indian National War Memorial should take. After full consideration of several proposals the Government decided in February, 1945, that the establishment of a Military Academy, on the lines of the United States Military Academy at West Point, would be the most suitable war memorial. A committee known as the Working Committee of the War Academy was established in May, 1945. A small sub-committee was sent abroad to visit West Point and other training centres in the U.S.A., U.K., and Canada before formulating their recommendations. In their report which was submitted in December 1946, the Working Committee of the War Academy recommended that the Academy for the training of cadets for commissions (other than medical) in the Army, Navy and Air Force was a sound one. In regard to location the committee after carefully considering a large number of sites including Poona, Bangalore, Dehra Dun, Jubbulpore, Puri and Secunderabad recommended that the Academy be located at the Khadakvasla lake. The points that weighed with the committee were that the Academy would be near Poona, would not be far from sea and would enjoy temperate climate almost throughout the year. Khadakvasla, in the opinion of the Committee met all the requirements of an ideal site. The salient features of the scheme recommended by the Committee were (1) Admission to the Academy should be governed by merit

(2) the minimum educational qualification should be matriculation examination or its equivalent, but the candidates should be required to pass a special qualifying test before appearing before a Selection Board (3) the tuition, messing and clothing at the Academy should be free (4) candidates must be between 16 and 18 years of age (5) the period of training should be four years.

The Government of India approved the scheme of the Committee in broad outline but decided that the period of training should be three years instead of four. After three years the cadets should spend one for specialised training in the respective Service Establishments. The age for admission was fixed at 15½ to 17 years.

THE JOINT SERVICES WING

Pending the construction of the Academy buildings at Khadakvasla an Inter Services Academy known as Joint Services Wing was started at Dehra Dun on an experimental basis from 1st of January 1949. The Late Sardar Vallabhai Patel, who inaugurated the Joint Services Wing said 'In no country of the world had training of all the three Services been centered in one institution. The Joint Services training is designed to give to cadets a wonderful opportunity of developing that interservices comradeship and co-ordinated efficiency.' Twelve courses were held at the Joint Services Wing at Dehra Dun. The headquarters of the National Defence Academy and the Joint Services Wing were shifted from Dehra Dun in December 1954 and started functioning at the permanent new buildings from the beginning of 1955, the 13th course, the first to be held at Khadakvasla began on January 10, 1955.

THE NEW SENSE OF PRIDE

The opening of the new buildings at Khadakvasla created a new sense of pride amongst the Service Chiefs and other senior officers. In a message on the occasion General Maharaj Rajendrasinghji, the then Commander-in-Chief, Army said 'We, in the Army, are really proud and happy on this historic occasion of the opening of the new buildings of National Defence Academy at Khadakvasla. In the course of my duties as G.O.C.-in-Chief, Southern Command at Poona, it was given to me to assist in the development of this great

training institution for the Armed Forces. It is pleasing to find what once was a neglected forest, has been converted into a big colony pulsating with activity. It is indeed a dream come true.' Vice-Admiral C.T.M. Pizey, the then Commander-in-Chief, Navy, said 'The inauguration of the National Defence Academy at Khadakvasla is a milestone in the history of India's Armed Forces. Modern tactics have proved that the defence of a country does not depend upon the efforts of any one arm of any one Service. In this light it is both necessary and logical that the future commanders and officers of the Indian Armed Forces should start their careers in a common mould so that in later years when they are called upon to make decisions jointly in an emergency, each Service will understand the problems of other two services. By having the National Defence Academy as their Alma Mater the sons of India can be truly proud of their birthright which, I am sure, they will cherish and which will be their guiding star throughout their careers.' Air Marshal S. Mukherjee, the Chief of Air Staff said: 'As a member of the National War Academy Sub-Committee I had, in 1946, an opportunity of visiting U.S.A., U.K. and Canada, and to study the organisation of various Services and Inter-Services academies. I had, therefore, an opportunity of being closely associated with the early planning of our Academy and the subsequent progress of this project. I have always been of the opinion that an Inter-Services Defence Academy is a pre-requisite for the initial training of officers of our Defence Forces. It is in an institution of this nature that the very basic qualities of Inter-Services understanding and co-operation can be inculcated in the cadets. The starting of the Services Wing at Dehra Dun was the start of this great undertaking. The conception at Khadakvasla and its completion has indeed been a great endeavour and constitutes not only a land mark in the history of the Defence Forces but that of the country itself.'

THE BUILDINGS

Dominating the vast area from the commanding central position and with its massive structure is the Academy's main Administrative Block with a frontage of 300 ft. The foundation stone of this block was laid by the Prime Minister on October 6, 1949. Surrounded by a dome, 125 ft. high, lined with Jodhpur stone the Administrative Block has a basement

and two storeys which house the offices of the Commandant, conference room and class rooms for languages, mathematics and social science. These class rooms are of three sizes accommodating students ranging from 25 to 60. In addition there are two group class rooms which can seat upto 125 students. The ground floor of the block is an arcade of Chinchwad stone which has an octagonal marble entrance hall immediately below the dome. The inner dome which is about 70 ft. high has a central eye in the shape of Ashoka Chakra while gay murals have been painted around it. The first and the second floors have a rich collonade of pink Jodhpur stone while just above the main entrance arch stands an inspiring eleven-foot statue of Dronacharya, father of Indian Military Science.

On the right of the Administrative Block is the 600 ft. long, double storeyed, Laboratory and workshop building with a central clock tower capped by a rotating aluminium dome for astronomical observations. This is another lovely piece of architecture which provides large class rooms and laboratories equipped with most modern facilities. The workshops are of specially light built steel components known as Lamellas...the first of their kind to be used in the East, covered with corrugated alluminium sheets. The interior of the workshops has been treated with special colour schemes which tend to induce a cheerful atmosphere. Decorating the entrance hall to the laboratory are bas reliefs in red Jodhpur stone representing Electrical Technology, Chemistry, Biology and Engineering. In addition there are three bas relief pannels depicting Indian Arts.

The Library on the right of the Administrative Building and Assembly Hall and the Museum on the left also have pink stone collonades to provide harmonious composition. The Library has been planned to house 75,000 volumes and will make provision, in separate sections for self study, general reading, periodicals and newspapers. The Assembly Hall has a seating arrangement for 1,750 and is flanked in front by large halls to house museum exhibits.

The cadets reside in single rooms in three comuses, assemble in the mess and take their meals at one time. The kitchens attached to the mess are equipped with electrically operated cooking appliances. The battery of 40 gallons boiling pans for cooking rice, porridge and puddings, the

OFFICERS' CAP BADGES

ARMY



GENERAL OFFICERS



OFFICERS

NAVY



ALL OFFICERS

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AIR OFFICERS



OFFICERS

baking ovens and the hot plate ranges, the multiple frying pans for puffing chapaties, the automatic dish washing machines cleaning 10,000 pieces of crockery per hour, the 25 gallons ice-cream freezers and a host of other auxiliaries and gadgets provide a complete assembly for cooking almost all items of daily menu, and it can be rightly claimed that the entire equipment is the largest single installation of its kind in the country. The trolley cum water service for economising on time and labour enables the cadets to finish their meals within the limited intervals provided for the purpose.

The extensive estate forming the part of National Defence Academy has been planted with nearly 90,000 trees. This forest area comes to about 2,200 acres. The question of soil conservation has been taken into consideration and about 500 gully plugs have been constructed at Nallas with rubble walls at different places and about 35,000 running feet soil bunds have been built to check soil erosion. Extensive arboricultural work has been done and the plants have grown satisfactorily. Attention has been given at the same time to landscaping the buildings and areas around them. The total area covered under lawns at fifty different places comes to about 8,40,000 sq. ft. in front of the main Administrative Block, on the main lawn, a beautiful lotus pool has been designed and constructed which catches the eye of every visitor. Hedges have been grown along the roads by the side of bungalows and by the sides of the compounds. The total length of the hedges is 1,20,000 running ft. The estate has got its own nursery spread over an area of four acres. Plans for extensive fruit cultivation have also been put into operation.

With regard to services, the Academy is self contained. It has got its own water works, drainage works and electric installation. The water works provide for a maximum demand of one million and a half gallons per day. The Academy draws its electricity in bulk from the receiving station of the Poona Electric Supply Company at Chaturinghi. 1250 K.W. are transmitted through 11 KV high tension transmission lines over a distance of eleven miles. Six sub-stations in the Academy estate step down the voltage to feed the various load centres.


CULTURAL ACTIVITIES

Cultural activities are recognised everywhere as an important part of education. This is particularly true of

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Services Academy because a Serviceman who knows how to use his leisure with profit and enjoyment is more efficient than a Service man who does not. There is abundant provision at the National Defence Academy for a large number of hobbies and cultural activities. As interests and aptitudes are bound to vary from one person to another, cadets are given a wide choice of hobbies. A period of forty-five minutes is set apart on each working day for club activities. Club activities however, are not forced, and great care is taken to ensure that no compulsion is exercised in this sphere because cultural activities by their very nature are voluntary. Each club has an officer Adviser who keeps himself carefully in the background and lets the cadets and the office bearers get unlimited opportunities for learning organising and administrative work and giving themselves training in leadership. Experience in this respect has been very encouraging and there have been instances where cadets have shown outstanding merit in fields of activities not very pronounced in them in the beginning. For administrative convenience the clubs have been divided into two groups, the Chief Instructor exercises overall supervision over the outdoor clubs and the principal exercises overall control over all indoor clubs.

ENTRANCE TO THE ACADEMY

The Academy has been planned to cater for an intake of 500 cadets per year. Entrance to the Academy is through the Union Public Service Commission which holds a qualifying test every six months. Candidates who qualify at these tests have to appear before the Services Selection Boards which are located at Dehra Dun for the Air Force and at Meerut for the Army and Navy for a final test and interview. Courses at the Academy start in January and July every year. Competitive examinations are conducted by the Union Public Service Commission at various centres in India about six months before the commencement of the courses. The age limits for the Army and Air Force cadets are 15 to 17½ and for Naval cadets between 15 and 17 years on the first day of the month in which the course is scheduled to start. Matriculation is the minimum educational qualification. The candidates have to be unmarried or widowers without children. In order to qualify at the U.P.S.C. entrance examination candidates have

to secure 40 per cent of the aggregate marks and 33½ per cent marks in each subject separately.

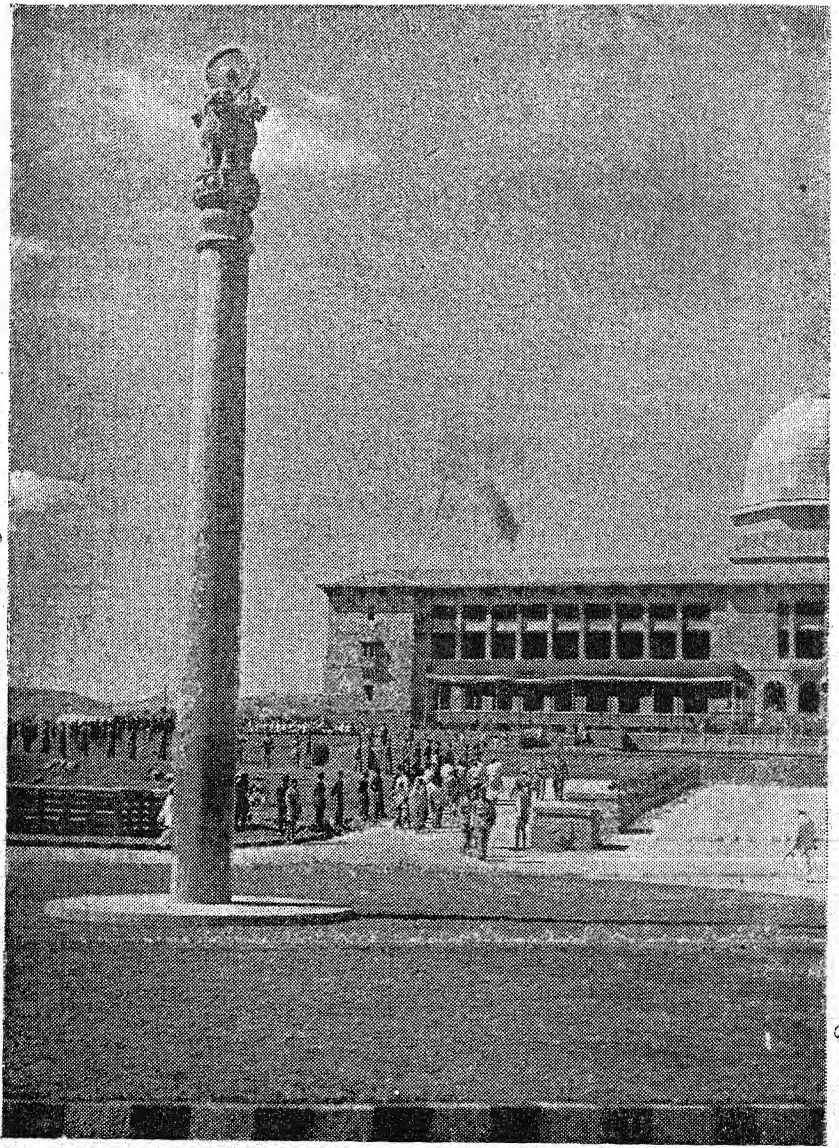
The Academic curriculum at the Academy is exceptionally wide and varied. The accent is on three subjects most vital to the further training for commissions viz., Science, Mathematics and English. But a considerable time is devoted to Social studies, Hindi, a foreign language (in the case of cadets proficient in Hindi,) geography, workshop practice and engineer drawing. On the whole it is a skillfully devised scheme of general education calculated to make the cadets cultured and thinking citizens. Training for the cadets of all three services is one and indivisible for the first two years. Also training is conducted in different departments with constant reference to all overall purposes.... that of producing a balanced personality capable of meeting the varied demands that a Service career makes on a man particularly on a leader of men. Drill to develop precision and co-ordination of movement and the habit of instantaneous response to command, P.T. to make the body supple instrument of the will, agitation to develop confidence and sense of mastery these subjects rightly occupy pride of place in the outdoor training imparted at the Academy. In addition the cadets are given a working knowledge of map reading and are introduced during annual camps to the rudiments of tactics. To promote an understanding of one another's Services, cadets are made familiar with the organisation and administration of three Services in broad outline. Though the cadets are assigned to the different Services at the very outset, training for them in the first two years is integral and undifferentiated. In the third year, however, a certain amount of specialist training for the three Services is introduced, though naturally not much can be fitted into the frame work of joint basic training. Army cadets proceed to more advanced training in weapon training, arms drill and map reading and receive field training upto section level. Naval cadets study navigation, seamanship, signals and administration and have practical training in the Khadakvasla lake in the form of sailing, pulling and practical seamanship. Air Force cadets study meteorology, navigation, armament, theory of flight signals, aero engines, air frames and airmanship, besides practising gliding. Simultaneously with this cadets of all the three Services continue their Academic training on the foundations laid in the first two

years. In the case of Naval and Air Force Cadets and of Army cadets for the technical arms, education in the third year has a pronounced scientific bias. On the other hand army cadets for non-technical arms choose instead a subject of their liking .. literature or modern history of economics, for advanced studies.

Though no syllabus outlines and no apparatus demonstrates it, moral training...the formation of character and leadership qualities.... is no less vital a part of the training at the Academy than the physical pursuits and academic and Service studies. Whether be it in the playing field, the class room or the mess, the process of character building and training in leadership goes all through the three years, bringing the cadet progressively nearer the Academy's ideal 'Service Before Self'.

All expense of the training of the cadets at the Academy (including accommodation books, uniforms, boarding and medical treatment) are borne by the Government except that the cadets have to provide Rs. 30|- as pocket expenses. Where the income of the parent is less than Rs. 300|- per mensem Government pays this money also from its funds. Candidates desirous of securing financial assistance have to submit an application through the District Magistrate of their respective districts, immediately after their final selection. The application with the District Magistrate's recommendations are submitted to the Ministry of Defence Government of India.

The two years' course at the Joint Services Wing at Dehra Dun was recognised as equivalent to the intermediate standard by most of the universities in India and by the Ministry of Home Affairs for appointments under the Government. The Universities have been approached to grant year to year recognition to the course at the National Defence Academy. In other words if a cadet has successfully completed the first year of training he is treated as having completed one year after Matriculation and so on. This has been done to ensure that a cadet who is withdrawn from the Academy for reasons other than weakness in academic subjects does not suffer in his studies on account of having joined the Academy.



Main Administrative Block National Defence Academy.

UNION PUBLIC SERVICE COMMISSION EXAMINATION

An Army, Navy and Air Force examination for admission to the National Defence Academy is held by the Union Public Service Commission at Allahabad, Bombay, Calcutta, Delhi, Ludhiana, Madras, Nagpur, Patna, Shillong and Jammu. The date of this examination is duly notified in the Gazette of India and in the general press.

Candidates accepted for admission to the examination are informed at what place, at what time and on which dates they should present themselves.

Candidates seeking admission to the examination are required to submit their applications on the prescribed form together with all the necessary documents in accordance to the 'Instructions to the candidates' so as to reach the Union Public Service Commission, Dholpur House, Post Box No. 186, New Delhi on or before the date specified by Commission. Applications from candidates residing abroad are also accepted on or before such dates as are notified to them. Applications received after the prescribed dates are not entertained. Copies of application forms and other connected papers are obtainable from the Secretary, Union Public Service Commission on payment of Re. 1/- (Rupee one only) which has to be remitted to the Commission by money order stating the name of the examination in respect of which the application forms are required. This amount is refunded to those candidates whose claim to be displaced persons from Pakistan or unliberated areas of Jammu and Kashmir is accepted by the Commission on receipt of their applications. Application forms and connected papers are obtainable free of charge from any of the authorities noted below :—

(1) Headquarters, Delhi area, Delhi Cantt. (2) Headquarters, Sub-Area, Ambala|Bangalore|Bombay|Jullunder|Lucknow|Meerut|Poona. (3) Headquarters, Jubbulpore Indep. Area, Jubbulpore. (4) Headquarters Panagar Base, Panagar. (5) Station Staff Officer, Allahabad. (6) Recruiting Officer, Jullunder|Lucknow|Calcutta|Poona|Bangalore|Kurnaghat. (7) Commodore-in-charge, Navy Office, Vithal House, Mint Road, Bombay. (8) Commodore-in-Charge, Cochin. (9) Naval Officer-in-charge, Vizagapatam. (10) Resident Naval Officer, Calcutta. (11) Resident Naval Officer, Madras. (12) Air Headquarters, P. O. 3,

New Delhi. (13) All National Cadet Corps Units. (14) Air Force Recruiting Officers: — (a) I.A.F., Station Mussouri, Allahabad. (b) Majumdar Lines, Church Road, Ambala Cantt. (c) Headquarters Training Command (Unit) Infantry Road End, High Grounds, Bangalore Cantt. (d) A.F.I. Buildings, Hospital Lane, Dhobi Talao, Bombay-1. (e) No. 1, Gokhale Road, Calcutta-20. (f) I.A.F. Station, Jodhpur (Rajasthan). (g) I.A.F. Station, Jorhat (Assam). (h) I.A.F. Station, Chakeri, Kanpur. (i) I.A.F. Station, Tambaram, Madras. (j) I.A.F. Station, Pulgaon, Nagpur. (k) I.A.F. Station, Race Course Camp, Safdar Jung, New Delhi. (l) I.A.F. Station, Yervada, Poona-6.

No allegation that an application form or a letter in respect of such a form has been lost or delayed in the post is considered unless the person making such an allegation produces post office registration receipt. Candidates who send their application or request for forms at a late date do so at their own risk.

Candidates who have taken the examination held previously and who wish to appear at the subsequent examination have to submit their applications by the prescribed dates without waiting for the results of the former examination. If they are finally selected their candidature for the subsequent examination is cancelled and the fee refunded to them in full.

Candidates have to indicate in the application forms their order of preference if they wish to compete for more than one Service. Due consideration is given to the preference expressed by the candidates at the time of their application but the Government of India reserves the power to assign to them any Service or branch of Service taking into consideration the vacancies available in each Service or branch and aptitude of the candidates. Ratings (including boys and artificer apprentices) of the Indian Navy have to give Indian Navy as their first preference. Candidates who have applied for the Indian Navy Examination for admission as Special Entry Cadets into the Indian Navy or Indian Air Force College must exercise their final option before admission to the National Defence Academy Course. After admission they will be considered neither for Special Entry in the Navy nor for direct commission in the Air Force.

Candidates must be unmarried males and must either be:—

(a) Citizens of India or (b) Subjects of Sikkim or (c) Persons who have migrated from Pakistan or from the unliberated areas of Jammu and Kashmir with the intention of permanently settling down in India or (d) Subjects of Nepal or of a Portuguese or a former French possession in India.

The appointment of candidates in categories (c) and (d) are subject to the issue of certificates of eligibility in their favour by the Government of India. Certificates of eligibility are not however necessary in the case of candidates who (1) have migrated to India from Pakistan before 19th July, 1948 and have ordinarily been residents of India since then (2) who have migrated to India from Pakistan after July 18, 1948 but before 30th September, 1948 and had not themselves registered as citizens within the time allowed. (3) Gurkha subjects of Nepal; and (4) Non-Citizens who entered Service under the Union before the commencement of the Constitution viz., 26th January, 1950 and who have continued in such service since then. Any such person who re-entered or may re-enter such service with a break after 26th January, 1950, will however, require certificates of eligibility in the usual way.

A widower or a person who has divorced his wife cannot be treated as an unmarried male for the purpose.

MEDICAL FITNESS

Candidates must be medically fit in all respects. A number of qualified candidates are rejected subsequently on medical grounds. Candidates are, therefore, advised in their own interest to get themselves medically examined before submitting their applications to avoid disappointment at the final stage. The development of the candidates should be such that by the time they attain the age of 17 they will reach the standards of medical fitness as shown below:—

(1) There is no evidence of weak constitution imperfect development, serious malformation or obesity.

(2) There is no maldevelopment or impairment of function of the bones of the skull.

(3) There is no impediment of speech.

(4) There is no malformation of the head, deformity from fracture or depression of the bones of the skull.

(5) There is no impaired hearing, discharge from or disease of either ear, unhealed perforation of the tympanic membranes or signs of acute or chronic suppurative otitis media or evidence of radical or modified radical mastoid operation.

(6) There is no disease of the bones or cartilages of the nose or nasal polyps or disease of the nasopharynx.

(7) There are no enlarged glands in the neck and other parts of the body and that the thyroid gland is normal. Scars of operations of tuberculosis glands are not a cause for rejection provided that there has been no active disease within the preceding five years and the chest is clinically and radiologically clear.

(8) There is no disease of the throat, palate, tonsils or gums or disease of or injury effecting the normal function of either mandibular joint. Simple hypertrophy of the tonsils, if there is no history of attacks of tonsillitis, is not a cause for rejection.

(9) There is no sign of functional or organic disease of the heart and blood vessels.

(10) There is no evidence of pulmonary tuberculosis or previous history of this disease or any other chronic disease of the lungs.

(11) There is no evidence of any disease of the digestive system including any abnormality of the liver and spleen.

(12) There is no hernia or tendency thereto.

(13) There is no hydrocele or definite varicocele or any other disease or defect of the genital organs.

(14) Those who have been operated for hydrocele are accepted if there are no abnormalities of the cord and testicle and there is no evidence of filariasis.

(15) There is no fistula and/or fissure of the anus or evidence of haemorrhoids.

(16) There is no disease of the skin unless temporary or trivial, scars which by their extent or position cause or are likely to cause disability or marked disfigurement are a cause for rejection.

(17) There is no active, latent or congenital venereal disease.

(18) There is no history or evidence of mental disease. Candidates suffering from epilepsy, incontinence of urine, or enuresis are not accepted.

(19) There is no squint or morbid condition of the eye or of the lids which is liable to a risk of aggravation or recurrence.

(20) There is no active trachoma or its complications. Remedial operations are to be performed prior to entry. No guarantee is given of ultimate acceptance and it should be clearly understood by the candidates that the decision whether an operation is desirable or necessary is one to be made by his private medical adviser. The Government accepts no liability regarding the result of operation or any expense incurred.

Standards for Height, Weight and Chest measurements :—

(1) Height:— The height of a candidate is measured by making him stand against the standard with his feet together. The weight is thrown on the heels and not on the toes or outer sides of the feet. He stands erect without rigidity and with the heels, calves, buttocks, shoulders touching the standard, the chin is depressed to bring the vertex of the head level under horizontal bar and the height is recorded in inches and quarter parts thereof. Height standards for candidates of the different age normally are:— 15 to 16 years..... 62", over 16 years..... 63". The minimum height in respect of Gurkha, Nepalese, Assamese and Garhwalis may be reduced by 2".

Air Force Only. To meet the special requirements for training as pilot the minimum height and leg length should be:—

Height.... 64", Leg length (Hip to heel) 39".

On account of the lower age of the candidates a margin upto 2" in height and 1" in leg length may be given provided it is certified by the Medical Board that the candidate is likely to grow and come upto the required standard on completion of his training.

Weight (1) Height and weight is taken with candidates fully stripped. It is not possible to lay down precise standards.

for weight in relation to height and age. But a 10% departure from the average is permissible at the discretion of the medical board. In recording weight fractions of a pound will not be noted.

(2) A table showing correlation between height, age and average weight is given below for guidance.

Age period	15—16	16—17	17—18
Height (inches)	Weights (lbs.)	Weights (lbs.)	Weights (lbs.)
62	96		
63	99	103	
64	102	106	110
65	106	110	114
66	108	112	116
67	112	116	120
68	116	120	124
69	120	124	128
70	124	128	132
71	129	133	137
72	134	138	142

Chest :—The chest should be well developed with a minimum range of expansion of 2". The candidate's chest is measured by making him stand erect with his feet together, and his arms raised over his head. The tape is so adjusted round the chest that its upper edge touches the inferior angles of the shoulder-blades behind, and its lower edge the upper part of the nipples in front. The arms are then lowered to hang loosely by the side. Care is taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The candidate is then directed to take a deep inspiration several times, and maximum and minimum expansions of the chest are carefully noted. The minimum and maximum will then be recorded in inches thus 33/35, 34/36, etc.

In recording the measurements fractions of less than half an inch is not noted.

Dental Condition

It should be ensured that a sufficient number of natural and sound teeth are present for efficient mastication.

(a) A candidate must have a minimum of 14 dental points to be acceptable. In order to assess the dental condi-

tion of an individual, points are allotted as under for teeth in good apposition with corresponding teeth in the other jaw.

- (i) Central incisor, lateral incisor, canine, 1st and 2nd premolar and under-developed 3rd molar
1 point each.
- (ii) 1st and 2nd molar and fully developed third molar
2 points each.

When all 32 teeth are present, there will be a total count of 22 points.

(b) The following teeth in good functional apposition must be present in each jaw.

- (i) Any 4 of the 6 anteriors.
- (ii) Any 6 of the 10 posteriors.

(c) Candidates suffering from severe pyorrhoea will be rejected. Where the state of pyorrhoea is such that in the opinion of the dental officer, it can be cured without extraction of teeth, the candidate may be accepted.

Visual Standards

(a) Visual acuity

Standard I

	Better Eye	Worse Eye
Distant vision	V=6|6	V=6|9 Correctable to 6|6
Near vision	Reads 0.5 or J1	Reads 0.5 or J1

Standard II

Distant vision	V=6|12 Correctable to 6|6	V=6|18 Correctable to 6|9
Near vision	Reads 0.5 or J1	Reads 0.5 or J1

Standard III

Distant vision	V=6|24 Correctable to 6|6	V=6|24 Correctable to 6|12
Near vision	Reads 0.5 or J1	Reads 0.5 or J1

(b) Colour vision .. safe or defective safe

Field of vision .. Normal in each eye
as tested by confrontation test.

(c) Requirements for the services.

ARMY — VS III—(Minimum Standard)

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NAVY—(i) VS I except that it is not esseential for the vision in the worse eye to be correctable to 6/6.

(ii) Special requirements.

Night vision standard—Candidates who fail to secure Grade II (eleven) are to be rejected.

Heterophoria — Must not exceed

Hyperhoria 1 prism dioptr

Exophoria } 6 prism dioptr

Esophoria }

Limits of hypermetropia—(under homdtropine)

Better Eye

Hypermetropia 1.50 dioptr

Simple Hypermetropic astigmatism 0.75 dioptr

Compound hypermotropic astigmatism The error in the mere hypermetropic meridian must not exceed 1.5 dioptr of which not more than 0.75 dioptr may be due to astigmatism.

Worse Eye

Hypermetropia 2.5 dioptr

Simple Hypermetropic astigmatism 1.5 dioptr

Compound Hypermotropic astigmatism The error in the mere hypermetropic meridian must not exceed 2.5 dioptr of which not more than 1.00 dioptr may be due to astigmatism.

Colour Perception Standard I

AIR FORCE—(i) VS I—No glasses will be worn.

(ii) Special requirements.

Ocular muscle balance — Heterophoria must not exceed.

Exophoria — 6 prism dioptr

Esophoria — 6 prism dioptre
Hyporphoria — 1 prism dioptre
Binocular vision — Normal as tested on
Red Green test and Bishop Harman test
If 2.5 prism dioptre of esophoria is present
on the Red Green test together with
2.25 D hypermetropia it will be a cause
for rejection.

Hearing Standards

Hearing will be tested by speech test. Where required audiometric records will be also taken.

(a) Speech Test

The candidate should be able to hear a forced whisper with each ear separately standing with his back to the examiner at a distance of 20 feet in a reasonably quiet room. The examiner should whisper with the residual air; that is to say at the end of an ordinary expiration.

(b) Audiometric Record.

The candidate will have no loss of hearing in either ear at frequencies 128 to 4096 cycles per second. (Audiometry reading between + 10 and - 10).

EDUCATIONAL QUALIFICATIONS

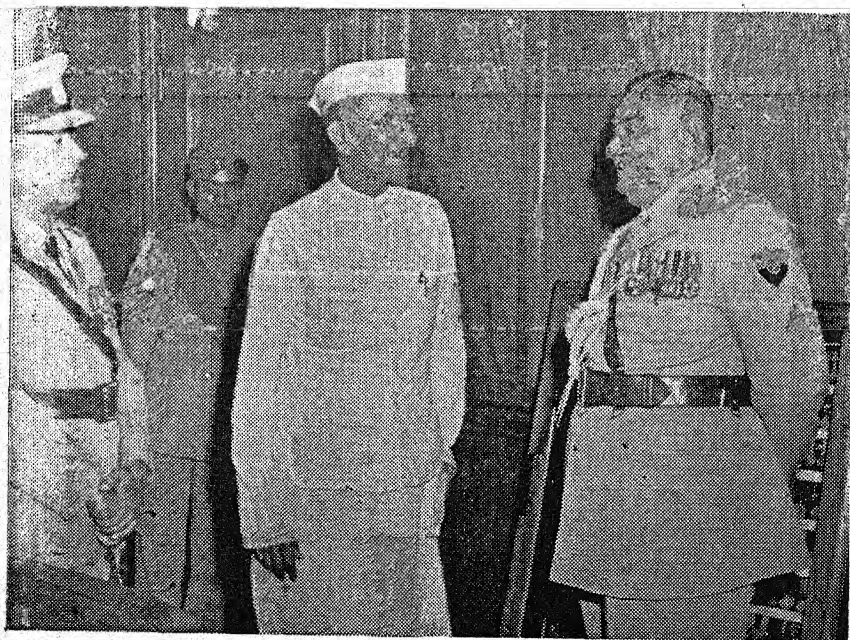
Candidates must have passed one of the following examinations or possess one of the following certificates. Attention is, however, invited to Notes (i), (ii) and (iii) below.

- (a) the Matriculation Examination of a recognised Indian University;
- (b) an examination accepted by any such University as equivalent to Matriculation Examination for the purpose of admission to a university course;
- (c) an examination held by a State Education Board at the end of the Secondary School Course for the award of a School Leaving, Secondary School, High School or any other Certificate which is accepted by the Government of that State as equivalent to Matriculation Certificate for entry into its services;
- (d) the Cambridge School Certificate Examination;

- (e) any other examination which may be recognised by the Union Public Service Commission as equivalent to the above;
- (f) the Indian Army Special Certificate of Education;
- (g) the French Government School Examination 'Brevet Elementaire' or 'Brevet d' Enseignement Primaire de Lengue Indienne' subject to the production of a certificate of proficiency in English from the Director of Public Instruction in any of the States of the Indian Union;
- (h) the Higher Educational Test of the Indian Navy;
- (i) Tenth Class Certificate from the Technical Higher Secondary School of the Delhi Polytechnic;
- (j) Tenth Class Certificate from a Higher Secondary School in Delhi/Simla;
- (k) Junior examination of the Jamia Millia Islamia, Delhi, in the case of bona fide resident students of the Jamia only;
 - (l) Bengal (Science) School Certificate;
- (m) the Anglo-Vernacular School Leaving Certificate (Burma) with eligibility for University course;
- (n) the Burma High School Final Examination Certificate with eligibility for University course;
- (o) European High School Examination held by the State Governments;
- (p) Ceylon Senior School Certificate Examination;
- (q) School Leaving Certificate Examination of the Government of Nepal;
- (r) T. S. "Dufferin" Final Passing out Certificate;
- (s) Post War School Leaving Certificate of Burma;
- (t) Certificate granted by the East Bengal Secondary Education Board, Dacca;
- (u) Advanced class (Indian Navy) Examination;
- (v) Vidyadhikari diploma of Gurukul University Kangri, Hardwar. (From 31st December, 1949);
- (w) Adhikari Diploma of Gurukul University, Brindaban. (From 8th May, 1948).



Bombay's Chief Minister Mr. Morarjee R. Desai, performing the opening ceremony of National Defence Academy. Also in the picture are the three Services Chiefs and the Chief Engineer (N.D.A.P.)



Bombay's Chief Minister Mr. Morarjee Desai talking to General Maharaj Rajendersinhji happy and proud that a dream has come true.

NOTE:—(i) In the case of cadets of the Prince of Wales Military College a certificate from the Principal to the effect that the cadet has reached the "Matriculation Pass" standard of education will be accepted.

NOTE:—(ii) Candidates who have appeared or intend to appear at any of the Examinations the passing of which would render them eligible to appear at this examination may also apply for admission to the examination. The applications of such candidates will be accepted provisionally and they will be required to furnish proof of having passed that examination as soon as possible and in any case before the final result is published.

NOTE:—(iii) Students of Public Schools or of schools which prepare specially for Cambridge School Certificate Examination who are due to appear at the Cambridge School Certificate Examination are also eligible to apply for this examination provided they can submit a certificate from the Headmaster/Principal of the School that they are due to appear at the Cambridge School Certificate Examination and that they have attained the Matriculation standard of education.

DISABILITIES

Candidates found guilty of impersonation or of submitting fabricated documents or documents which have been tampered with or making statements which are incorrect or false or suppressing material information or of using or attempting to use unfair means in the examination hall or otherwise resorting to any other irregular or improper means for obtaining admission to the examination, may, in addition to rendering themselves liable to a criminal prosecution, be debarred either permanently or for a specified period:—

(a) by the Commission from admission to any examination or appearance at any interview held by the Commission for selection of candidates; and (b) by the Central Government from employment under the Government.

FEEs

Candidates who obtain application form from the Union Public Service Commission must pay Rs. 36|8|- (Rs. 8|6|- in the case of candidates belonging to the Scheduled Castes or

Scheduled Tribes) with the application. Those who obtain application forms from other authorities must pay Rs. 37|8|- (Rs. 9|6|- in the case of Scheduled Castes or Scheduled Tribes) with the application. Only a Treasury Receipt or Crossed Indian Postal Orders payable to the Secretary, Union Public Service Commission is accepted. The Commission cannot accept fees in cash or by cheque. No claim for a refund of this fee is ordinarily entertained nor it can be held in reserve for any other examination or selection. A refund of Rs. 30|- (Rs. 7|8|- in the case of Scheduled Castes or Scheduled Tribes) is made to candidates who are not admitted to the examination by the Commission or who secure 30 per cent or more marks in the aggregate of the written papers. The Commission may at their discretion remit the prescribed fee where they are satisfied that the applicant is a bona fide displaced person from Pakistan or from the unliberated areas of Jammu and Kashmir and is not in a position to pay the prescribed fees. The children of Junior Commissioned Officers, Non-Commissioned Officers and other ranks of the Army and equivalent ranks in the Navy and Air Force studying in the King George's Schools whose applications are forwarded by the Principals with the recommendations that the applicants may be expected to secure at least 50 per cent of the aggregate marks of the written papers are not required to pay any fees.

DOCUMENTS WITH THE APPLICATION

Candidates must send the following documents with their applications:—

1. Treasury Receipt:—An application not accompanied by a Treasury Receipt or Crossed Indian Postal Orders for the prescribed fee is summarily rejected and no explanation for inability to send the treasury receipt or the Indian Postal Orders with the application is considered. This does not apply to displaced persons seeking remission of the fee provided he forwards with his application his Refugee Registration Card in original and a Certificate, also in original, from a Gazetted Officer of the Government or a Member of the Parliament or State Legislature to show that he is not in a position to pay the prescribed fee.

2. Certificate of Age:—The only proof of age ordinarily accepted by the Commission is the age or date of

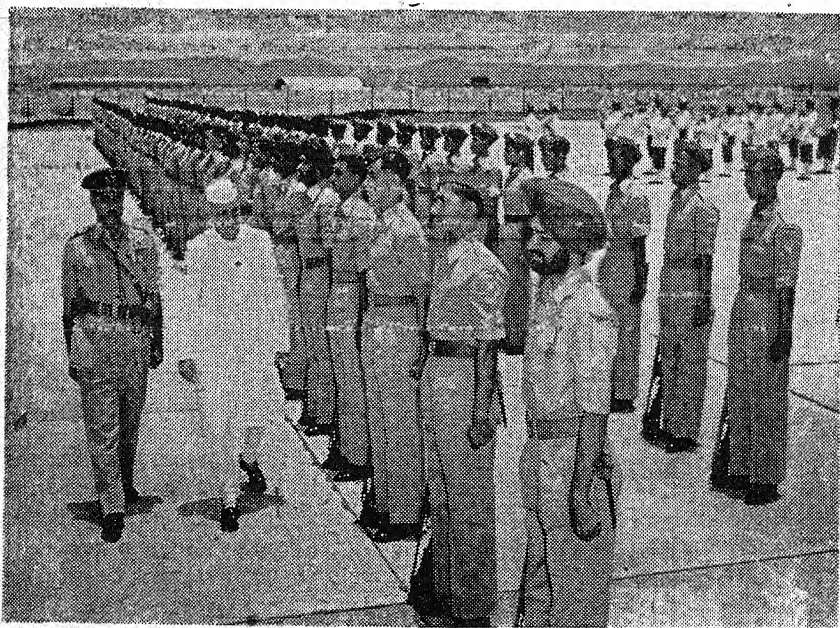
birth entered in the Matriculation Certificate or in the Secondary School Leaving Certificate or in a certificate recognised by an Indian University as equivalent to Matriculation or in an extract from a Register of Matriculates maintained by a University, which extract must be certified by the proper authority of the University. Sometimes the Matriculation Certificate only shows the age by completed years or completed years and months. In such cases the candidates must send in addition to the Matriculation Certificate an original certificate together with a copy thereof from the Headmaster of the High Schools from where they matriculated showing the date of their birth or their exact age as recorded in the Schools Admission Register. An Anglo-Indian or an Indian Christian may send his original baptismal or birth registration certificate together with a copy thereof instead of the Headmaster's certificate. If the Matriculation or equivalent certificate has not been issued to a candidate he should along with his application include an age certificate from the Headmaster of the school from where he appeared in the Matriculation examination. Such candidate will be required to submit his original Matriculation or equivalent certificate before he is admitted to the National Defence Academy. He will be disqualified if latter on it is found that the date of birth claimed by him differs from that entered in his Matriculation or equivalent certificate unless the discrepancy is explained to the satisfaction of the Commission. Cadets of Prince of Wales College, Dehra Dun and students of the King George's Military Schools must submit a certificate of age from the principal of the college|school and no other certificate as a proof of their age will be required.

CERTIFICATE OF EDUCATIONAL QUALIFICATIONS

Candidates must submit a certificate or diploma in original with a copy thereof showing that they have one of the qualifications prescribed in the rules. The certificate issued must be one by the authority (University or other examining body) awarding the particular qualification. If such a certificate is not submitted, the candidates must explain its absence and submit such other evidence in original as they can to support their claim to the requisite qualifications. The Commission will consider this evidence on its merits but do not bind themselves to accept it as sufficient. Candidates



Bombay's Chief Minister Mr. Morarjee R. Desai, talking to the Cadets.



Prime Minister Nehru inspecting the guard of honour presented by N.D.A. Cadets at the National Defence Academy.

who have appeared or intend to appear at any of the examinations the passing of which will render them eligible to appear at this examination may also apply for admission. The applications of such candidates are accepted provisionally and they are required to furnish proof of having passed that examination as soon as possible and in any case before the final result is published. Students of public schools or schools which prepare boys for Cambridge School should submit a certificate from the Headmaster/Principal of the School that they have attained the Matriculation standard of education. Cadets of the Prince of Wales Military College should submit a certificate from the Principal to the effect that they have reached the Matriculation standard of education. In exceptional cases a candidate who has been prevented from obtaining a Matriculation Certificate or its equivalent for reasons beyond his control may at the discretion of the Commission be admitted to the examination provided he produces a certificate from a Gazetted Officer of the Central or State Government or a Principal or a Headmaster specifying the institution where he studied upto Matric class, the University or the Board which was holding the examination, whether admission certificate was issued to him and the reasons which prevented him from taking the examination.

The originals of the certificates forwarded are returned when the result of the application is communicated. Candidates are advised to keep attested copies of their certificates before submitting them to the Commission. The Commission cannot return the certificates earlier than the date of communication of the result of the application for whatever purpose they may be required nor they can supply attested copies.

PHOTOGRAPHS :—The candidates must submit two copies of passport size copies of their most recent photograph, one of which should be pasted on the first page of the application form and the other copy should be firmly attached with the application form. Each copy of the photograph should be signed in ink on the front side by the candidate.

SCHEDULED CASTES & SCHEDULED TRIBES :—Candidates who claim to belong to one of the Scheduled Castes or Scheduled Tribes should submit in support of their claim a certificate, in original, from the District Officer or the

Sub-Divisional Officer of the district in which their parents ordinarily reside; if, both the parents are dead, of the district in which they themselves ordinarily reside other than for the purpose of their education. Candidates from Delhi may bring such a certificate also from the Additional District Magistrate or the First Class Stipendiary Magistrate or the Revenue Assistant. The form of the Certificate is :—

'This is to certify that son of of Village District Division in the State belong to the community which is recognised as a Scheduled Caste Tribe under the Constitution (Scheduled Castes) Order 1950, under the Constitution (Scheduled Tribes) Order, 1950, the Constitution (Scheduled Castes) Part C States) Order 1951, the Constitution (Scheduled Tribes (Part C States) Order, 1951, Shri and/or his family ordinarily reside(s) in District/Division State.

Dated.

Seal.

District Magistrate,
Deputy Commissioner.
Sub-Divisional Officer,
State.

COMMUNICATIONS:—All communications in respect of application should be addressed to the Secretary Union Public Service Commission, Post Box No. 186, Dholpur House, New Delhi and should invariably contain the following particulars :—

- (1) Name of the Examination
- (2) Month and Year of Examination
- (3) Roll Number (if communicated to the candidate)
- (4) Name of the Candidate (In block letters)
- (5) Address as given in the application.

CHANGE IN ADDRESS :— Candidates must see that communications addressed to them at their specified address are redirected, if necessary. Change in address should be communicated at the earliest opportunity. If the change of address has taken place after the announcement of the result of the examination, it should also be notified to Army Headquarters, A. G.'s Branch, Org., S. P. I., Defence Headquarters, P. O, New Delhi-II.

SERVICES SELECTION BOARDS :— The Union Public Service Commission prepares a list of candidates in order of their merit as disclosed by the aggregate marks awarded to each candidate at the examination. The candidates who obtain qualifying marks at the written examination, appear before the Services Selection Board, where candidates for the Army/Navy are assessed in officer potentialities, while those for the Air Force in Pilot Aptitude as well as officer potentialities. The maximum number of marks obtainable at the Services Selection Boards are 900. To qualify for the Army/Navy, candidates must secure the minimum qualifying marks both in the written examination and in the Officer Potentialities Tests. Candidates for the Air Force, in addition to qualifying in the written examination must also separately secure minimum qualifying marks in the Pilot Aptitude and the Officer Potentialities Tests. Air Force candidates failing to qualify in the Pilot Aptitude Test will not be considered for the Air Force. Subject to these conditions, the qualified candidates are placed in order of merit on the basis of marks secured by them in the written examination and the Services Selection Board Tests in two separate lists, one for the Army/Navy and the other for the Air Force. The final selection for admission to the National Defence Academy is made in order of merit depending on the number of vacancies for each Service.

Candidates appear before the Service Selection Board, and undergo tests thereat, at their own risk and are not entitled to claim any compensation or other relief from Government in respect of any injury which they may sustain in the course of and or as a result of any of the tests given to them at the Services Selection Board, whether due to the negligence of any person or otherwise. Parents or guardians of the candidates are required to sign a certificate to this effect on a prescribed form. Candidates when called for interview are eligible for travelling allowance in accordance with the rules then in force. Candidates who have previously been before a Services Selection Board for the same type of Commission are not entitled to travelling allowance on subsequent occasions.

CERTIFICATE BY PARENTS, — Before a candidate joins the Academy, the parent or guardian is required to sign:

- (a) A certificate to the effect that he fully understands that he or his son/ward shall not be entitled to claim any

compensation or other relief from the Government in respect of any injury which his son|ward may sustain in the course of or as a result of the training to be undergone by him at the Academy, whether due to the negligence of any person or otherwise.

(b) A bond to the effect that, if for any reasons considered within the control of the candidate, he wishes to withdraw before the completion of the course, or fails to accept a commission if offered he will be liable to refund the whole of such portion of the cost of tuition, food, clothing and pay and allowances received, as may be decided upon by Government.

INITIAL DEPOSITS:— Candidates finally selected for training at the Academy are required to deposit the following amount with the Commander, on arrival there:—

(a) Candidates not applying for Government financial aid:—

- (i) Pocket allowance for five months
at Rs. 30|- per month.....Rs. 150|-
- (ii) For items of clothing and equipment..Rs. 400|-

Total Rs. 550|-

(b) Candidates applying for Government financial aid:—

- (i) Pocket allowance for two months
at Rs. 30|- per month.....Rs. 60|-
- (ii) For items of clothing and equipment..Rs. 115|-

Total Rs. 175|-

SCHOLARSHIPS

(1) PARSHURAM BHAU PATWARDAN Scholarship:— This scholarship is awarded to cadets from Maharashtra and Karnatak. The value of the scholarship is upto a maximum of Rs. 1,000|- per annum for the duration of a cadet's stay at the National Defence Academy, subject to the cadet making satisfactory progress. The scholarship is also available at the Army, Naval and Air Force Training establishments where a cadet may be sent for further training after he has completed his training at the National Defence Academy. The cadets who are granted this scholarship are not entitled for any other financial assistance from the Government.

(2) MAHARAJA JAGADDIP ENDRA NARAYAN Scholarship :— This scholarship of the value of Rs. 360/- per annum is granted to a needy cadet who fails to secure any financial assistance from the Government and is paid on completion of a term at the National Defence Academy. The scholarship is sanctioned by the Government on a means-cum merit basis.

(3) COLONEL KENDAL FRANK'S MEMORIAL Scholarship:— This scholarship is of the value of Rs. 360/- per annum and is granted to a Maratha cadet who should be the son of an ex-serviceman. The scholarship is in addition to any financial assistance from the Government.

TECHNICAL GRADUATES COURSE (N.D.A.)

The Technical Graduates' Course has been specially introduced to train technical graduates for commissions in the technical corps of the Army. This Course caters for :—

- (a) Corps of Engineers;
- (b) Corps of Signals;
- (c) Corps of Electrical and Mechanical Engineers;
- (d) Remounts, Veterinary and Farms Corps (Farms Wing).

Qualifications

Age

A candidate must be between 20 to 27 years on the first day of July of the year in which the course commences at the National Defence Academy.

Education

The minimum academic qualifications are :—

Corps of Engineers

The candidates must possess any of the following qualifications :—

- (a) Passed Sections 'A' and 'B' of the Associate Membership Examination of the Institution of Engineers (India) or such other examination as is accepted by the Institution in exemption thereof.
- (b) (i) Final passing out Certificate from IMMTS 'DUFFERIN'.

- (ii) The second Mates Board of Trade Ticket or a Certificate of satisfactory completion of apprenticeship from a recognised Marine Engineer Workshop, as required by the Board of Trade.
- (c) First or Second Class Engineers Certificate of competency awarded by the Board of Trade.
- (d) A degree in Marine Engineering.

Corps of Signals

The candidates must possess any of the following qualifications :—

- (a) An engineering degree of a recognised university with Line or Wireless as one of the subjects.
- (b) A degree of a recognised university in Applied Physics/Physics and Mathematics supplemented by a diploma of a recognised Tele-communication Institute in Radio Engineering.
- (c) A first class honours degree in Physics or honours degree in Physics of a university which does not award classes in its honours degree examination or a first class degree in Physics of a recognised university which does not run an honours course in Physics in its degree class.
- (d) An M. Sc. degree in Physics/Applied Physics of a recognised university. Candidates with Wireless or Line Communication as one of the subjects will be given preference.
- (e) A graduate of the Institution of Electrical Engineers (IEE), U. K., with Line or Radio Communication as one of the subjects in Section 'B'.
- (f) Associate Membership of the Institution of Engineers (India) with Electrical Communication Engineering as one of the subjects in Section 'B' or such other Tele-communication qualification which exempts from examination in Sections 'A' and 'B' of this Institution.
- (g) An M. Sc. degree in Radio Physics and Electronics of the CALCUTTA University.

Corps of Electrical and Mechanical Engineers

The candidates must possess any of the following qualifications :—

- (a) Associate Membership of the Institution of Engineers (India) with Electrical Engineering, Electrical Communication Engineering, Thermo-dynamics and Heat Engine or Workshop Technology as one of the subjects in Section 'B' or such other Electrical, Mechanical, Automobile or Telecommunication Engineering qualification which exempts from examination in Sections 'A' and 'B' of this Institution.
- (b) A degree in Electrical and Mechanical Engineering of a recognised university.
- (c) A first class honours degree in Physics or honours degree in Physics of a university which does not award classes in its honours degree examination or a first class degree in Physics of a recognised university which does not run an honours course in Physics in its degree class, preferably with basic studies in Radar.
- (d) An M. Sc. degree in Physics/Applied Physics of a recognised university preferably with basic studies in Radar.
- (e) An M. Sc. degree in Radio Physics and Electronics of the CALCUTTA University.

Remounts, Veterinary and Farms Corps (Farms Wing)

The candidates must possess a degree in Agriculture of a recognised Indian University with Dairying as one of the subjects, or an equivalent foreign qualification in Agriculture.

General

Candidates who have appeared or intend to appear at an examination the passing of which would render them eligible, may also apply provided they can furnish proof of having passed the examination before the commencement of the course.

Candidates should be physically fit in all respects.
Married candidates are also eligible to apply.

Frequency of Courses

The courses are held annually commencing in July. Applications are invited by Army Headquarters in September/October each year and details published in all the leading papers of the country. Application forms can be obtained from Army Headquarters.

Selection and Training

Candidates are not required to take the Union Public Service Commission examination but are interviewed by Services Selection Boards. The final selection is made in order of merit. Selected candidates undergo training for one year at the National Defence Academy. Candidates who are Engineering Graduates may be granted provisional Short Service Regular Commissions in the rank of Second Lieutenant for the period of training at the Academy.

Expenses during Training

The cost of training including accommodation, books, boarding and medical treatment is borne by the Government. Cadets are, however, required to meet their pocket and other private expenses. Normally these expenses are not likely to exceed Rs. 40/- per month. In such cases where cadets' parents or guardians are unable to meet wholly or partly even this expenditure, financial assistance upto Rs. 40/- per month may be granted by the Government. No cadets whose parent or guardian has an income of Rs. 300/- per month or above is eligible for the grant of this financial assistance.

Candidates who are granted provisional Short Service Regular Commission for the duration of the training are required to meet the expenses for accommodation, messing and other allied services at the Academy out of their pay. The approximate amount to be recovered monthly on that account is likely to be Rs. 182/-.

MILITARY COLLEGE DEHRA DUN

An examination for admission to Military College, Dehra Dun, is held by the Union Public Service Commission at Allahabad, Bombay, Calcutta, Delhi, Jammu, Ludhiana, Madras, Nagpur, Patna and Shillong in accordance with the notification published by the Ministry of Defence in the Gazette of India.

Candidates accepted for admission to the examination are informed the place, time and dates of the examination.

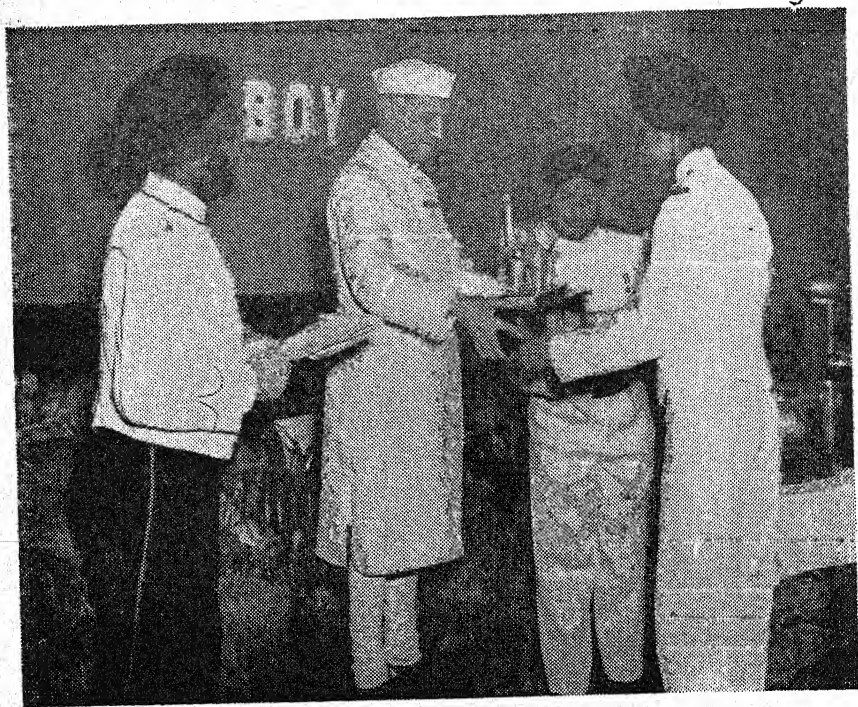
Candidates seeking admission to the examination are required to submit their application on the prescribed form with all the necessary documents to reach the Union Public Service Commission on or before the dates specified. Copies of application and full particulars are obtainable from the Secretary, Union Public Service Commission on payment of Re. 1/- or free of charge from:—(1) Headquarters, Delhi, Area, Delhi Cantt. (2) Headquarters, Sub-Area, Ambala Bangalore, Bombay, Jullunder, Lucknow, Meerut and Poona. (3) Headquarters, Jubbulpore, Independent Sub-Area, Jubbulpore. (Headquarters, Panagar Base, Panagar, (4) Recruiting Officer, Jullunder, Lucknow, Calcutta, Poona, Bangalore, Kurnaghat. (5) All National Cadet Corps Units.

Candidates must be unmarried males and must either be (a) citizens of India or (b) subjects of Sikkim or (c) persons who have migrated from Pakistan or unliberated areas of Jammu and Kashmir with the intention of permanently settling down in India or (d) subjects of Nepal or of a Portuguese or a former French possession in India. (For details see same heading under J.S.W.).

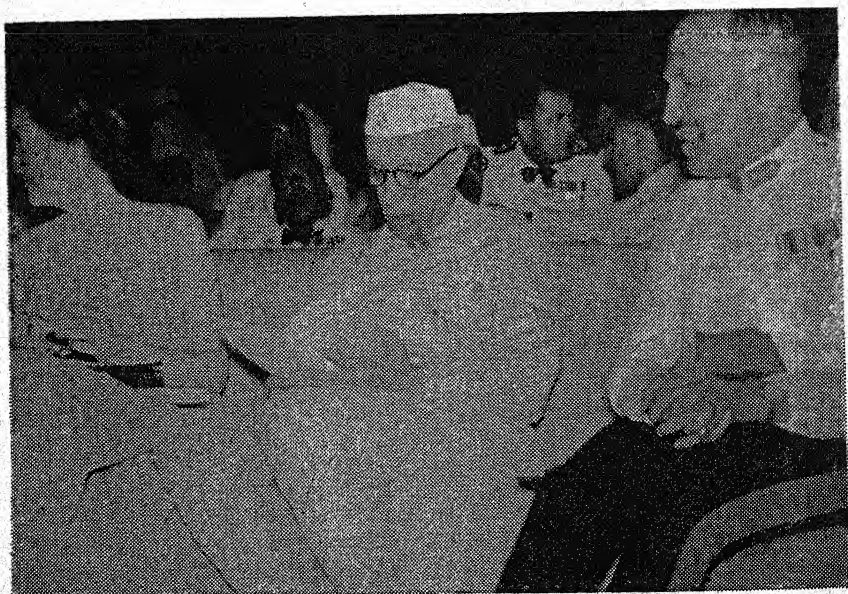
Candidates must be between the ages of 18 to 21 years. These ages are also applicable to the personnel serving in the regular or Territorial Army and can in no case be relaxed.

EDUCATIONAL:—Candidates must have passed one of the following examinations:—

- (a) the Intermediate Examination of a University or Board approved by the Parliament or a State Legislature, or an examination recognised by such University or Board as equivalent to its Intermediate Examination; or



Prime Minister presenting Trophy to the top Cadet



Mr. Nehru at the play put up by the N.D.A. Seated on his left is Major General Habibullah, the Commandant N.D.A.

- (b) the first year examination under the three-year Degree course of the Delhi University; or
- (c) the Jamia Senior Examination of the Jamia Millia Islamia, Delhi; or
- (d) the Cambridge Higher School Certificate examination; or
- (e) the Cambridge School Certificate examination and thereafter must have successfully completed one academic year in a recognised college; or
- (f) a diploma examination in engineering provided that the examination is taken after a course lasting not less than 2 years subsequent to Matriculation and provided also that the examination is recognised by a State Government for employment under it; or
- (g) any other examination which may be recognised by the U.P.S.C., as equivalent to the above.

Candidates who have appeared or intend to appear at any of the above examinations may also apply for admission to this examination. The applications of such candidates are accepted provisionally and they are required to furnish proof of having passed that examination as soon as possible and in any case before the final result is published. Candidates who were admitted to an earlier course at National Defence Academy, Air Force Academy or Naval Training Establishment but were removed therefrom are not admitted to this examination. Flight cadets who were removed from the Air Force Academy due to their inability to learn flying may, however, apply if otherwise eligible in all respects. Applications from candidates who were permitted to resign from the Academy on compassionate grounds are considered on merit.

PHYSICAL STANDARDS

To be passed fit for admission to the Military College a candidate must be in good physical and mental health and free from any disability likely to interfere with the efficient performance of duty.

General :— Same as for Joint Services Wing


(a) Height—

- (i) The height of a candidate is measured by making him stand against the standard with his feet together. The weight should be thrown on the heels and not on the toes or outer sides of the feet. He will stand erect without rigidity and with the heels, calves, buttocks and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar, and the height will be recorded in inches and quarter parts thereof.

- (ii) The minimum acceptable height for a candidate is 62 inches except in the case of Gurkhas, Nepalese, Assamese and Garhwali candidates in whose case the height in correlation table at (b) (ii) below may be reduced by two inches.

(b) Weight—

- (i) Height and weight is taken with candidates fully stripped. It is not possible to lay down precise standards for weight in relation to height and age. But a 10% departure from the average is permissible



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at the discretion of the medical board. In recording weight fractions of a pound will not be noted.

- (ii) A table showing correlation between height, age and average weight is given below for guidance:—

Height without shoes
Inches

Weight

Age last
birthday

Min.
lbs.

Max.
lbs.

17 to 18 Years

62 and under 65	96	121
65 and under 68	106	131
68 and under 72	116	141
72 and upwards	126	..

19 Years

62½ and under 65	98	123
65 and under 68	108	133
68 and under 70	118	143
70 and under 72	128	153
72 and upwards	138	..

20 and upwards

62½ and under 65	100	125½
65 and under 68	110	135
68 and under 70	120	145
70 and under 72	130	155
72 and upwards	140	..

- (c) Chest :— The chest should be well-developed with a minimum range of expansion of 2 inches. The candidate's chest will be measured by making him stand erect with his feet together, and his arms raised over his head. The tape will be so adjusted round the chest that its upper edge touches the inferior angles of the shoulder-blades behind, and its lower edge the upper part of the nipples in front. The arms will then be lowered to hang loosely by the side. Care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The candidate will then be

directed to take a deep inspiration several times, and the maximum and minimum expansions of the chest will be carefully noted. The minimum and maximum will then be recorded in inches thus 33|35, 34|36, etc.

In recording the measurements, fractions of less than half an inch should not be noted.

DENTAL CONDITION:— It should be ensured that a sufficient number of natural and sound teeth are present for efficient mastication.

- (a) A candidate must have a minimum of 14 dental points to be acceptable. In order to assess the dental condition of an individual, points are allotted as under for teeth in good apposition with corresponding teeth in the other jaw.

(i) Central incisor, lateral incisor, canine, 1st and 2nd premolar and under-developed 3rd molar.
1 point each.

(ii) 1st and 2nd molar and fully developed 3rd molar.
2 points each.

When all 32 teeth are present, there will be a total count of 22 points.

- (b) The following teeth in good functional apposition must be present in each jaw:—

(i) Any 4 of the 6 anteriors.

(ii) Any 6 of the 10 posteriors.

- (c) Candidates suffering from severe pyorrhea are rejected. Where the state of pyorrhea is such that in the opinion of the dental officer, it can be cured without extraction of teeth, the candidates may be accepted.

VISUAL STANDARDS—

Standard I

Right Eye

Distant vision V6|6 or J-2

Near vision—Reads 0.5 or J-1

Left Eye

V|66

Reads 0.5 or J-1,

Standard II

Better Eye

Worse Eye

Distant vision—V6|6

V6|60 without glasses—not below 6|60 and after correction with glasses—not below 6|24.

Near vision—Reads 0.5 or J-1 Reads 0.5 or J-1.

Standard III

Better Eye

Worse Eye

Distant vision—V 6|60 correctable to 6|6.

V 6|60, correctable to 6|24.

Near vision—Reads 0.8 or J-4

Reads 1 or J-6
Standard III

NOTE:—On completion of training at the time of commissioning, or in case of direct entrants at the time of commissioning, a relaxation of distant vision without glasses may be made and individuals with unaided vision of less than 6|60 in each eye accepted for commission in ASC, AOC, EME, AEC and RVFC provided corrected vision is not less than 6|6 in one eye and 6|18 in the other eye.

HEARING STANDARD:—Hearing will be tested by speech test. Where required audiometric records will also be taken.

(a) Speech test:—The candidate should be able to hear a forced whisper with each ear separately standing with his back to the examiner at a distance of 20 feet in a reasonably quiet room. The examiner should whisper with the residual air; that is to say at the end of an ordinary expiration.

(b) Audiometric record:—The candidate will have no loss of hearing in either ear at frequencies 128 to 4096 cycles per second. (Audiometry reading between plus 1 and -10).

PAPERS

Papers will be set on the following subjects:—

	Time	Max. Marks
(1) English	2½ hours	300
(2) General knowledge and Current Affairs ..	2½ hours	300
(3) Mathematics I ..	2 hours	150
(4) Mathematics II ..	2 hours	150

2. All papers must be answered in English unless otherwise expressly stated.

3. Candidates must write the papers in their own hand. In no circumstances will they be allowed the help of an amanuensis (scribe) to write down answers for them.

4. The commission have discretion to fix qualifying marks in any or all the subjects at the examination.

5. From the marks assigned to candidates in each subject, such deduction will be made as the Commission may consider necessary in order to secure that no credit is allowed for merely superficial knowledge.

6. Deductions up to 5% of the maximum marks for written subjects will be made for illegible handwriting.

7. Credit will be given for orderly, effective and exact expression combined with due economy of words in all subjects of the examination.

STANDARD AND SYLLABUS OF THE EXAMINATION

Question papers in English and General Knowledge are of Intermediate standard. Those in Mathematics are of Matriculation standard.

ENGLISH

- (1) Essay writing. Choice of three or four subjects may be given.
- (2) Precis writing. A passage of 300 to 350 words may be given.
- (3) Letter writing. Narration, Description and Dialogue writing.
- (4) Questions on synonyms, antonyms, idiomatic use of words and phrases and common errors, if necessary, to be split into parts.
- (5) Parts of speech. Simple Analysis, Syntax and direct and indirect speech.

NOTE :— Questions 1 and 2 are compulsory. Alternative questions may be set as far as questions 3, 4 and 5 are concerned. The object of the paper is to test the candidate's ability to write the English language correctly. Account is taken of arrangement, subject matter, general expression and command of English.

GENERAL KNOWLEDGE AND CURRENT AFFAIRS

The paper is divided into two parts.

Part A—dealing mainly with Current Affairs and History.

Part B—dealing with Science and Geography.

The following syllabus is designed to indicate the scope of each subject included in this paper. The topics mentioned are not to be regarded as exhaustive and questions on topics of similar nature and not mentioned in the syllabus may also be asked. Candidate's answers are expected to show their intelligent understanding of the question and not knowledge of any text books.

PART A

CURRENT EVENTS:—Knowledge of important events that have happened in India during the past two years. India's system of Government. Important measures of legislation whether undertaken by the Parliament or State Legislatures. Broad questions of India's policy relating to foreign affairs. Questions set will test the factual knowledge of candidates.

World events of international importance. Important personalities, both Indian and foreign. Sports and other cultural activities of outstanding importance.

INDIAN HISTORY:—Broad outline knowledge of Indian History. Knowledge of India's ancient culture and civilization as disclosed by monuments, ancient buildings and masterpieces of literature. Growth of self-Government. Main stages in the national movement leading to Independence.

WORLD HISTORY:—Elementary knowledge of major events in world history. Reforms or national movements such as represented by the French Revolution, Industrial Revolution in the U.K., the American War of Independence, the foundation of U.S.S.R., World Wars I and II, Modern freedom movements in Asia.

PART B

SCIENCE

PHYSICS:—Physical properties and states of matter and simple measurements of mass, weight, density and specific gravity.

Motion of object: Velocity, acceleration, force, gravity.

Effects of heat, measurement of temperature, transference of heat, change of state.

Rectilinear propagation of light, phenomenon of reflection and refraction.

Natural and artificial magnets— properties of a magnet.

Electricity, static and current, conductors, and non-conductors, heating, lighting and magnetic effects of currents.

CHEMISTRY: — Physical and chemical changes, elements, mixtures and compounds, chemical properties of air, chemical composition of water. Preparation and properties of Oxygen, Hydrogen and Nitrogen Acids, Bases and Salts: Carbon, Coal, Carbon-dioxide.

Elementary knowledge of the human body and its important Organs.

Names and use of common animals, trees, plants, flowers, birds and minerals.

Common epidemics, their causes, means of prevention and cure.

Eminent Scientists and their achievements.

GEOGRAPHY

The shape and movements of the earth. Time, Night and Day and the Seasons. Climate and weather—and main climatic and vegetation region. The Earth's crust-erosion, transportation and deposition; earthquakes and volcanoes. Tides and Ocean currents. Maps.

Human occupations and activities in relation to Geographical factors.

The Geography of India with special reference to the above.

MATHEMATICS I

ARITHMETIC:— Candidates should be familiar with the British, Metric and Indian systems of weights and measures and with the monetary systems of pounds, shillings and pence; rupees, annas and pies.

Unitary method, vulgar and decimal fractions and the extraction of square roots; proportion and proportional parts; calculation of averages; percentage; simple and compound interest; profit and loss; stocks and shares. Elementary mensuration. Candidates will be required to know simple formulae for determining volumes and areas associated with the rectangular block, the circular cylinder and the sphere.

Candidates may be required to give results to a specified degree of approximation, but the use of contracted methods of multiplication and division is not essential.

MATHEMATICS II

ALGEBRA:—Elementary algebraic operations, formulae expressing arithmetical generalisation; change of subject of a formula, factors and fractions. The use of fractional and negative indices and the elementary theory of logarithms. Solution of linear equations involving not more than two unknowns and quadratic equations involving only one unknown; the solution of simultaneous equation, one linear and one quadratic, involving two unknowns; and simple problems leading to such equations. The use of the remainder theorem; ratio and proportion; variation. Graphs and their simple applications.

NOTE:—In all calculations candidates will be permitted to use logarithmic tables.

GEOMETRY: —The paper in Geometry will contain questions on Practical and Theoretical Geometry.

The questions on Practical Geometry will be set on the constructions contained in Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate must provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compass and a fairly hard pencil. All figures must be drawn accurately and distinctly. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on Theoretical Geometry will consist of theorems contained in Schedule B, together with questions

upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition will be accepted which appears to the examiner to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as a sequence of their treatment. In the proof of theorems and deductions from them, the use of hypothetical constructions will be permitted.

Questions will be set on Schedules A (i), A (ii), A (iii) and B (i), B (ii), B (iii). The use of algebraical symbols and (in the solution of riders) of trigonometrical ratios is permitted.

GEOMETRY SCHEDULES

- Bisection of angles and of straight lines.

Schedule A (Practical) A (i)

Construction of perpendiculars to straight lines.

Construction of angle equal to a given angle.

Construction of angles 60° , 45° , and 30° .

Construction of parallel to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Divisions of straight lines into a given number of equal parts or into parts in any given proportions.

A (ii)

Construction of a square equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Construction of circumscribed, inscribed and escribed circles of a triangle.

A (iii)

Simple cases of the construction of circles from sufficient data.

Construction of a square equal in area to a given polygon.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6, or 8 sides in or about a given circle.

Schedule B (Theoretical)

(An asterisk indicates that proof of the theorem will not be required).

B (i)

Angles at a Point

*If a straight line stands on another straight line the sum of the two angles so formed is equal to two right angles and *the converse.

*If two straight lines intersect, the vertically opposite angles are equal.

Parallel straight lines

When a straight line cuts two other straight lines, if—

- (i) a pair of alternate angles are equal, or
- (ii) a pair of corresponding angles are equal, or
- (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and *the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

Triangles and Rectilinear Figures

The sum of the angles of a triangle is equal to two right angles.

In a polygon of n sides, the sum of the interior angles is equal to $2n-4$ right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

*If two triangles have two sides of the one equal to two sides of the other each to each and also the angles contained by those sides equal, the triangles are congruent.

*If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal, and *the converse.

*If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

*If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

*If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and *the converse.

*Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect each other.

If a pair of opposite sides of a quadrilateral are equal and parallel, it is a parallelogram.

The straight line drawn through the middle point of one side of a triangle parallel to another side bisects the third side.

The straight line joining the middle points of two sides of a triangle is parallel to the third side, and equal to one half of it.

If there are three or more parallel straight lines and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

B (ii)

Areas

Parallelograms on equal bases and of the same altitudes are equal in areas.

Corollary:— The area of a parallelogram is equal to the area of a rectangle on the same base and of the same altitude.

Parallelograms on equal bases and of the same altitude are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

*Equal triangles on the same or equal bases are of the same altitude.

In a right-angled triangle, the square described on the hypotenuse is equal to the sum of the squares described on the sides containing the right angle; and *the converse.

Loci:—The locus of a point which is equidistant from two fixed points is the perpendicular bisectors of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

The Circle:—A straight line drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely the perpendicular to a chord from the centre bisects the chord.

*There is one circle, and one only, which passes through three given points not in a straight line.

Equal chords of a circle are equidistant from the centre; and *the converse.

*The tangent at any point of a circle, and the radius through the point are perpendicular to each other.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal, and if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semicircle is a right angle.

The circle described on the hypotenuse of a right-angled triangle as a diameter passes through the opposite vertex.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and *the converse.

B (iii)

Areas:—The square on a side of a triangle is greater or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse or acute. The difference is twice the rectangle contained by one of the two sides and the projection on it of the other.

In any triangle the sum of the squares on any two sides is equal to twice the square on half the third side together with twice the square on the Median which bisects the third side.

The Circle:—In equal circles or in the same circle—

*(i) If two arcs subtend equal angles at the Centre, they are equal; (ii) conversely, if two arcs are equal they subtend equal angles at the centre.

In equal circles or in the same circle *(i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

If a straight line touches a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

Proportion; Similar Triangles

(Proofs which are applicable only to commensurable magnitudes will be accepted.)

If a straight line is drawn parallel to one side of a triangle the other two sides are divided proportionally; and *the converse.

*If two triangles are equiangular their corresponding sides are proportional and *the converse.

*If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional the triangles are similar.

If a perpendicular is drawn from the right angle of a right-angled triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to each other.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the square on corresponding sides.

Elementary Trigonometry

(Questions on Trigonometry will be optional)

(1) Measurement of angles.

Sexagesimal measures and circular or Radial measure.
Conversion of circular measures into Sexagesimal measure and vice versa.

(2) Trigonometrical ratios for angles less than a right angle.

The following trigonometrical ratios will be considered.

Sine, Cosine, Tangent, Cotangent, Secant and Cosecant of an angle.

Values of these trigonometrical ratios for angles of 0, 30, 45, 60 and 90 degrees.

(3) Trigonometrical ratios of angles of any size and sign.

Values of trigonometrical ratios for—

0° , $90^\circ-0^\circ$, $90^\circ-0^\circ$, $180^\circ-0^\circ$, $180^\circ-0^\circ$.

Ability to read values of trigonometrical ratios or angles from trigonometrical tables.

(4) Application of the trigonometrical ratios in solving simple vertical problems in Heights and Distances.

DOCUMENTS WITH THE APPLICATION

(1) Treasury Receipt or Crossed Indian Postal Orders payable to the Secretary Union Public Service Commission.

(2) Certificate of age.

(3) Certificate of Educational Qualifications.

(4) Two copies of the latest passport size photograph of the candidate.

FEES (as per J. S. W.)

SCHEDULED CASTES AND SCHEDULED TRIBES :—
as per J. S. W.

COMMUNICATIONS :— as per J.S. W.

DISABILITIES :— as per J. S. W.

SELECTION BOARDS :— as per J. S. W.

PARENTS / GUARDIAN CERTIFICATE :— as per
J. S. W.

TRAINING :— Candidates finally selected undergo a course of training for about two years. Candidates are enrolled under Army Act as 'Gentlemen Cadets' are dealt with for ordinary disciplinary purposes under the rules and regulations of Military College.

INITIAL DEPOSITS

While the cost of training including accommodation, books, uniforms, boarding and medical treatment are borne by the Government, candidates when finally selected are required to deposit the following amount with the Commandant on arrival.

Candidates not applying for Government Financial Aid:

Pocket allowance for five months

at Rs. 40 per month	Rs. 200
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For items of clothing and equipment	Rs. 400
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Total Rs. 600|

Candidates applying for Government Financial aid:

Pocket allowance for two months

at Rs. 40 per month	Rs. 80
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For items of clothing and equipment	Rs. 400
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Total Rs. 480|

Application for Government financial aid as per J. S. W.

SCHOLARSHIP :— Parsuram Bhau Patwardhan Scholarship as per J. S. W.

Colonel Kendal Franks Memorial Scholarship as per J. S. W.

OUTFIT ALLOWANCE :— All outfit allowance at the rates and under the general conditions applicable at the time for each cadet belonging to the Military College will be placed at the disposal of the Commandant. The unexpended proportion of this allowance will be (a) handed over to the cadet on his being granted a commission or (b) if he is not granted a commission refunded to the State. On being granted commission articles of clothing and necessaries purchased from this allowance shall become the personal property of the cadet. Such articles will, however be withdrawn from a cadet who resigns whilst under training or who is removed or withdrawn prior to commissioning. The articles withdrawn are disposed to the best advantage of the State.

SPECIAL ENTRY—INDIAN NAVY

An examination for the selection of Special Entry for the INDIAN NAVY is held by the Union Public Service Commission at Allahabad, Bombay, Calcutta, Delhi, Ludhiana, Jammu, Shillong and Madras. Candidates who desire to appear at the examination are required to submit their applications on the prescribed form with all the necessary documents in accordance with the 'Instructions to Candidates' regarding the filling of the forms so as to reach the Union Public Service Commission on or before the specified dates.

Application forms and other connected papers are obtainable from the Union Public Service Commission (as per J. S. W.) and free of charge from (1) The Commodore-in-Charge, Bombay, Vithal House, Mint Road, Bombay. (2) The Commodore-in-Charge, Cochin. (3) The Naval Officer-in-Charge, Vizagapatnam. (4) The Resident Naval Officer, Madras and (5) The Resident Naval Officer Calcutta.

Candidates must be between the ages of 19 and 21. These age limits cannot be relaxed.

Candidates must be unmarried males and must be:—

(1) Citizens of India; (2) subjects of Sikkim; (3) persons who have migrated from Pakistan or the unliberated areas of Jammu and Kashmir with the intention of permanently settling down in India; (4) subjects of Nepal or Portuguese or former French Possessions in India (other details as per J.S.W.).

Candidates must be medically fit in all respect for service in any part of the world.

Candidates must have passed one of the following examinations:—

- (a) the Intermediate Examination of a University or Board approved by the Parliament or a State Legislature, or an examination recognised by such University or Board as equivalent to its Intermediate Examination; or

- (b) the first year examination under the three year Degree course of the Delhi University; or
- (c) the Jamia Senior Examination of the Jamia Milia Islamia, Delhi; or
- (d) the Cambridge Higher School Certificate examination; or
- (e) the Cambridge School Certificate examination and thereafter must have successfully completed one academic year in a recognised school or college; or
- (f) a diploma examination in engineering provided that the examination is taken after a course lasting not less than 2 years subsequent to Matriculation and provided also that the examination is recognised by a State Government for employment under it; or
- (g) successful completion of the two years' course at the National Defence Academy, provided that discontinuance of the course after two years is not due to academic reasons; or
- (h) any other examination which may be recognised by the U.P.S.C. as equivalent to the above.

NOTE:— Candidates who have appeared or intend to appear at any of the above examinations may also apply for admission to this examination. The applications of such candidates will be accepted provisionally and the successful ones will be required to furnish proof of their having passed that examination as soon as possible and in any case before they are required to commence training, if finally selected.

SELECTION BOARD :— As per J. S. W., except that maximum number of marks in this case would be 1,500 and in the case of minors the certificate concerning risk and liability during the interview and tests will be signed by their parents or guardians on the form prescribed.

Selected Candidates are appointed Cadets and undergo one year's training at the National Defence Academy. On completion of this training they are required to undergo further training in Ships/Establishments of the Indian Navy. The duration including one year at the Academy is 3-1/2 to 6-1/2 years depending upon the branch of the Service to which a cadet is allocated. During the period of their training cadets of all branches are promoted to the rank

of Midshipman and Acting Sub-Lieutenant and in the case of Engineering and Electrical Branches they are also promoted to the rank of Sub-Lieutenant (and possibly to the Lieutenants rank). While at the Academy cadets are subject to the discipline of the Academy. During training in ships and Establishments of the Indian Navy they are subject to the Indian Navy (Discipline) Act, 1934. During all stages of initial training cadets are liable to be withdrawn from training and discharged if their progress is found to be unsatisfactory or they are otherwise considered unsuitable.

INITIAL DEPOSITS:—While at the Academy the cost of cadets training including books, uniform, accommodation, boarding and medical treatment are borne by the Government but the cadets are expected to deposit the following amount with the Commandant, National Defence Academy on arrival :—

Candidates not applying for Government financial aid:—
Pocket allowance for five months

at Rs. 40/- per month	.. ..	Rs. 200/-
For items of clothing and equipment	.. ..	Rs. 400/-
		<hr/>
Total		Rs. 600/-

Candidates applying for Government financial aid:—
Pocket allowance for two months

at Rs.40/- per month	.. ..	Rs. 80/-
For items of clothing and equipment	.. ..	Rs. 115/-
		<hr/>
Total		Rs. 195/-

Applications for financial aid from the Government are as per the J. S. W. training.

Subsequent training in Ships and Establishments of the Indian Navy is also at the expense of the Government. During the first six months of their training after leaving the National Defence Academy concessions similar to those admissible at the Academy are extended. After six months of training in the Ships and Establishments of the Indian Navy Cadets are promoted to the rank of Midshipman and they begin to receive pay and parents are not expected to pay for any of their expenses.

DISABILITIES:— Same as J.S.W.

CERTIFICATE BY PARENTS:— Same as J. S. W.

SCHOLARSHIPS:—Same as J.S.W., and for the duration of the stay in National Defence Academy.

SCHEDULED CASTES AND SCHEDULED TRIBES CANDIDATES :— Same certificate as J. S. W.

PHYSICAL STANDARDS

General:—As per J.S.W.

Height, Weight and Chest—

- (a) **Height.**— The minimum height for a candidate of 18 years of age is 62" except where otherwise stated. In case of Gurkhas, Nepalese, Assamese and Garhwal candidates the minimum height may be reduced by 2".
- (b) **Weight.**— A table showing correlation between height and weight is given below for guidance of the examining Medical Officer/Medical Board :—

Age period	16—17	18—19	20—22
Height 'inches'	lbs.	lbs.	lbs.
60	95	99	104
61	97	101	106
62	100	104	109
63	103	107	112
64	106	110	116
65	110	114	118
66	112	116	122
67	116	120	125
68	120	124	129
69	124	128	133
70	128	132	137
71	133	137	141
72	138	142	146

NOTE.— Heights and Weights as shown above are for men fully stripped. It is not possible to lay down precise standards with regard to height and weight. This is left to the discretion of the Recruiting Medical Officer/Medical Board who may select candidates below height/weight who in his/their opinion would acquire the necessary height/weight standards on attaining the age of 18/completion of training.

- (c) **Chest.**—The chest should be well proportioned and well developed with a minimum range of expansion of 2 inches.

It should be ensured that sufficient number of sound, natural teeth for efficient mastication are present.

(a) In order to assess the dental condition of an individual, teeth in good apposition with corresponding teeth in the other jaw will be allotted points as follows :—

- (i) Central incisor, lateral incisor, canine, 1st and 2nd premolar and under developed 3rd molar — 1 point each.
- (ii) 1st and 2nd molar and fully developed third molar — 2 points each.

When all 32 teeth are present, there will be a total count of 22 points.

(b) The following teeth on each side of the jaw in good functional apposition must be present :—

- (i) Central incisor, lateral incisor, canine — At least two must be present.
- (ii) 1st premolar, 2nd premolar — At least one must be present.
- (iii) 1st molar, 2nd molar, 3rd molar — At least two must be present.

(c) A candidate must have a minimum of 14 dental points to be acceptable.

(d) Candidates suffering from severe pyorrhoea will be rejected. Where the state of pyorrhoea is such that in the opinion of the Dental Officer, it can be cured without extraction of teeth the candidate may be accepted.

5. An X-Ray examination of chest will be carried out. Any defects or disability discovered during this examination will disqualify a candidate from entry into the service.

Eyesight Standard

Distant Vision		Near Vision	Colour perception standard
6|6	6|2	Each eye D—0—5 snellen.	

- NOTE. (1) Candidates who fail to secure night vision standard 11 (eleven) are to be rejected.
- (2) A limited number of candidates who fail to come up to eye sight standards given above may be accepted for one of the non-Executive Branches.

PAPERS

The subjects of the written examination, the time allowed and the maximum marks allotted to each subject will be as follows :—

Subject	Time allowed	Maximum marks
(A) Compulsory—		
1. English	2½ hours	300
2. General Knowledge	2½ hours	300
3. Lower Mathematics (2 papers)	2 hours each	300
4. Physics plus Chemistry (2 papers).	3 hours each	300
(B) Optional—		
5. British History from 1485	3 hours	300
6. Indian History	3 hours	300
7. Higher Mathematics (2 papers)	3 hours each	300

NOTE 1.—All candidates are required to take 5 subjects, namely, subjects from 1—4 and any one of the subjects from 5—7.

NOTE 2.—Candidates who do not state in their application form the optional subject offered by them or offer wrong subject will do so at their own risk and may be disqualified. No request for a change in the optional subject offered by a candidate will be entertained.

2. All papers should be answered in English. Use of scribes shall not be allowed.

3. The detailed syllabus is given below :—

- (1) **English.**— The questions will be designed to test the candidate's understanding and command of the language. Amongst other tests a passage will be set for precis.

(2) **General Knowledge.**— The paper will be divided into two parts :—

Part A —dealing mainly with current affairs and History;

Part B —dealing with Science and Geography.

The following syllabus is designed to indicate the scope of each subject included in this paper. The topics mentioned are not to be regarded as exhaustive and questions on topics of similar nature not mentioned in the syllabus may also be asked. Candidates' answers are expected to show their intelligent understanding of the question and not knowledge of any text book.

PART A

Current Events.— Knowledge of important events that have happened in India during the past two years. India's system of Government. Important measures of legislation whether undertaken by the Parliament or State Legislatures. Broad questions of India's policy relating to foreign affairs. Questions set will test the factual knowledge of candidates

World events of international importance. Important personalities, both Indian and foreign. Sports and other cultural activities of outstanding importance.

Indian History.— Broad outline knowledge of Indian History. Knowledge of India's ancient culture and civilisation as disclosed by monuments, ancient buildings and master pieces of literature. Growth of self-Government. Main stages in the national movement leading to Independence.

World History.— Elementary knowledge of major events in world history. Reforms or national movements such as represented by the French Revolution, the Industrial Revolution in the U. K., the American War of Independence, foundation of U. S. S. R., World Wars I and II. Modern freedom movements in Asia.

PART B

Science—

Physics.— Physical properties and states of matter and simple measurements of mass, weight, density and specific gravity. Motion of object. Velocity, acceleration, force,

gravity. Effects of heat, measurement of temperature, transference of heat, change of state.

Rectilinear propagation of light, phenomenon of reflection and refraction.

Natural and artificial magnets—properties of a magnet.

Electricity, static and current, conductors, and non-conductors, hearing, lighting and magnetic effects of currents.

Chemistry.— Physical and chemical changes, elements, mixtures and compounds, chemical properties of air, chemical composition of water. Preparation and properties of Oxygen, Hydrogen and Nitrogen, Acids, Bases and Salts, Carbon, Coal Carbon-di-oxide. Elementary knowledge of the human body and its important organs. Names and uses of common animals, trees, plants, flowers, birds and minerals.

Common epidemics, their causes means of prevention and cure.

Eminent scientists and their achievement.

Geography.— The shape and movements of the earth. Time, Night and Day and the seasons. Climate and Weather — the main climate and vegetation regions. The Earth's crust-erosion, transportation and deposition; earthquakes and volcanoes. Tides and Ocean currents, Maps.

Human occupations and activities in relation to geographical factors.

The Geography of India with special reference to the above.

Lower Mathematics.

PAPER I

Arithmetic.— Arithmetic, including simple methods of using statistical data.

The mensuration of plane areas and simple solid bodies. The determination of area, volume and density by displacement, by weighing, etc.

Geometry.— The substance of Euclid's six books. Elementary ideas in solid geometry treated informally; straight lines, planes, rectangular blocks, wedges, pyramids, cylinders, cones and spheres. Drawing and interpretation of plane and elevation.

Algebra.—Formulae, their evaluation and transformation, the notion of a function: rate of change. The gradient and area of a graph. The solutions of equations, linear and quadratic, simple and simultaneous. The use of logarithms. The meaning and simplest properties of negative and fractional indices. Arithmetical and finite geometrical sequences.

NOTE.—In the absence of any special instructions that a question is to be answered by a particular method candidates are at liberty to choose their method from any branch of mathematics.

PAPER II

Trigonometry.—Solution of plane triangles, graphs of trigonometrical functions, use of four figure tables, additional theorems.

Mechanics.—The lever, the inclined plane, the pulley the balances and other simple machines; the composition and resolution of forces in one plane; movements; simple graphical methods; simple cases of equilibrium, properties of the centre of gravity; work; velocity ratio; mechanical advantage, and efficiency of a machine.

The composition and resolution of velocities and acceleration in one plane, rectilinear motion under uniform acceleration; the conservation of linear momentum, work, energy and power; graphical treatment of varying velocities, accelerations and forces.

Proofs of the parallelogram and triangle of forces, and of the principle of moments will not be asked. Questions will not be set on curvilinear motion.

Physics plus Chemistry.—Two question papers will be set. One paper will be two-thirds Electricity and one-third Chemistry and the other paper two-thirds Physics other than Electricity and one-third Chemistry. In each paper candidates will be required to answer a question in Chemistry but a choice of questions will be given to that full marks may be scored without a knowledge of Organic Chemistry.

Physics.

Paper I—Section I

Electricity.—The fundamental ideas concerning electric currents, difference of potential, resistance, construction and

mode of action of the commoner primary batteries. The fundamental laws of electrolysis and their application in secondary cells and electroplating. Heating effect of a current; its application in incandescent and arc lamps, electric welding, cooking etc. The phenomena of permanent and induced magnetism in iron, fields of magnetic force; the magnetic field associated with an electric current. The construction and action of an electro-magnet; application in electric bells and telephones. The similar phenomena of electro-magnetic induction, broad principles and applications of the induction coil, magneto, dynamo and motor. The fundamental ideas concerning wireless telegraphy. The simple methods of measuring electric current, difference of potential and resistance; practical definitions of ampere, volt and ohm. Ohm's law. Construction and mode of action of simple measuring instruments, electric transmission of power by direct current; joule, watt, Board of Trade unit of electric energy.

Paper II—Section I

General Principles of measurement, solids, liquids and gases.

Hydrostatics.— Fluid pressure; floating bodies. Determination of specific gravity. Gaseous pressure. Boyles Law, Atmospheric pressure; barometers. Air and water pumps and other simple instruments.

Heat.— Temperature; thermometer; Specific heat; latent heat; calorimeters Expansion; measurement and simple illustrations. Transmission of heat; convection, conduction and radiation; application to heating and ventilating. Vaporization, distillation, humidity, fog and cloud. Heat considered as energy; mechanical equivalent, generation of heat; calorific values.

Optics.— Transmission, reflection, refraction of light. Prisms and lenses; the formation of images. Construction of simple telescope and microscope. The eye; spectacles. Intensity; principles of illumination, photometry. Dispersion; spectroscopes; colour.

Chemistry.

Paper I—Section II

Inorganic Chemistry.— The Chemical properties of oxygen, hydrogen, nitrogen, chlorine, carbon, sulphur.

phosphorous and their common compounds. The general characteristics and behaviour of the metal potassium, calcium, aluminium, copper, zinc, mercury, tin, lead and iron. The preparations (without technical details) and uses of chemicals of industrial importance, such as oxygen, soda, sulphuric acid, coal gas and of the more important metals.

Paper II—Section II

General Chemistry.—Elements, compound and mixtures. Laws of chemical combination. Equivalents, molecular and atomic weights. Structural formulas and valency. Outlines of the properties of solutions. Heat of reaction.

Organic Chemistry.—Outlines of the Chemistry of the simple compounds containing not more than two carbon atoms directly connected. An elementary knowledge of the properties of benzene and its simple derivatives. The part played by carbon compounds in the life of animals and plants, fats, soap, starch and sugars, treated descriptively. Carbon compounds as source of energy.

British History from 1485.—British History, including British Colonial History and European History as affecting British History.

Although a fixed date is given for the beginning of the period, candidates will be expected to know in general outline how the initial position was reached. Such knowledge of geography as is necessary to make the history comprehensive will be required.

Indian History with special reference to the History of India from 1526 onwards.—The paper will deal with great men and great events, great changes and great movements, and the broad features of general life in the history of India.

Higher Mathematics.

PAPER I

Geometry.—Elements of solid geometrical drawing, equations to the straight line, circle, ellipse, parabola, hyperbola and other simple curves, in rectangular co-ordinates. Acquaintance is expected only with the simplest theorems about the curves. Candidates are free to use the methods of the infinitesimal calculus.

Algebra.—Elementary knowledge of the use of indeterminate co-efficients, especially with partial fractions. Easy computation, including the numerical solution of equations.

PAPER II

Calculus.—Differentiation and integration of simple standard forms and other forms depending on them; application to easy geometrical, mechanical and physical problems, to turning values, and to the expansion of simple algebraic and trigonometrical functions. A working knowledge (without rigorous fundamental demonstrations) of the elementary infinite series for $(1+x)^m$, $\exp \log (1+x)$ and their use in approximative calculations

Mechanics.—The equilibrium of bodies in two dimension: link polygons. Harmonic Motion. Simple and conical pendulums. Projectiles. Simple cases of linked mechanism. The rotation of a rigid body about a fixed axis. The action of such mechanical devices as crank mechanisms, engine governors, cranes, brakes.

From the marks assigned to candidates in each subject such deduction will be made as the Union Public Service Commission may consider necessary in order to secure that no credit is allowed for merely superficial knowledge.

AIR FORCE ACADEMY

An examination for admission to the Air Force Academy is held by the Union Public Service Commission at Allahabad, Bombay, Calcutta, Delhi, Ludhiana, Madras, Nagpur and Patna. A notification to that effect is issued by the Ministry of Defence and is published in the Gazette of India and general press.

Application forms (which are obtainable from the undermentioned authorities) duly supported with all the details and documents required in other Services examinations conducted by the Union Public Service Commission have to reach on the specified date(s). Applications received after the specified date(s) are not entertained.

- (i) Personnel Officer 3, Air Headquarters, New Delhi-11.
- (ii) Air Force Recruiting Adjutants.
 - (a) 17, Majumdar Lines, Church Road, Ambala Cantt.
 - (b) IAF Station, Safdar Jung, New Delhi.
 - (c) IAF Station, Chakeri, Kanpur.
 - (d) IAF Station, Manauri, Allahabad.
 - (e) IAF Station, Jorhat (Assam).
 - (f) No. 1, Gokhale Road, Calcutta-20.
 - (g) IAF Station, Pulgaon, Nagpur.
 - (h) IAF Station, Jodhpur (Rajasthan).
 - (i) AFI Buildings, Hospital Lane, Dhobi Talao, Bombay-1.
 - (j) HQ Training Command (Unit), Infantry Road End, High Grounds, Bangalore.
 - (k) IAF Station, Yervada, Poona 6.
 - (l) IAF Station, Tambaram, Madras.

Candidates for admission to this examination have to be of 17-21 years of age. The age limits can under no circumstances be relaxed.

Candidates must have passed one of the following examinations or possess one of the following certificates.

- (a) the Matriculation Examination of a recognised Indian University;
- (b) an examination accepted by any such University as equivalent to Matriculation Examination for the purpose of admission to a university course;
- (c) an examination held by a State Education Board at the end of the Secondary School Course for the award of a School Leaving, Secondary School, High School or any other Certificate which is accepted by the Government of that State as equivalent to Matriculation Certificate for entry into its services;
- (d) the Cambridge School Certificate Examination;
- (e) any other examination which may from time to time be recognised by the Union Public Service Commission as equivalent to the above;
- (f) the Indian Army Special Certificate of Education;
- (g) the French Government School Examination 'Brevet Elementaire' or "Brevet d' Enseignement Primaire de Langue Indienne" subject to the production of a certificate of proficiency in English from the Director of Public Instruction in any of the State of the Indian Union;
- (h) the Higher Educational Test of the Indian Navy;
- (i) Tenth Class Certificate from the Technical Higher Secondary School of the Delhi Polytechnic;
- (j) Tenth Class Certificate from a Higher Secondary School in Delhi/Simla;
- (k) Junior examination of the Jamia Milla Islamia, Delhi, in the case of bona fide resident students of the Jamia only;
- (l) Bengal (Science) School Certificate;
- (m) the Anglo-Vernacular School Leaving Certificate (Burma) with eligibility for University Course;
- (n) The Burma High School Final Examination Certificate with eligibility for University Course;
- (o) European High School Examination held by the State Governments;
- (p) Ceylon Senior School Certificate Examination;
- (q) School Leaving Certificate Examination of the Government of Nepal;

- (r) I. M. M. T. S. "Dufferin" Final Passing out Certificate;
- (s) Post-war School Leaving Certificate of Burma;
- (t) Certificate granted by the East Bengal Secondary Education Board, Dacca;
- (u) Advanced Class (Indian Navy) Examination;
- (v) Vidyadhikari diploma of Gurukul University, Kangri, Hardwar (from 31-12-1949);
- (w) Adhikari diploma of Gurukul University, Brindaban (from 8-5-1948).

NOTE.— Candidates who have appeared or intend to appear at any of the above examinations may also apply for admission to this examination. Their applications will be accepted provisionally and they will be required to furnish proof of their having passed that examination as soon as possible and in any case before they join the Academy, it finally selected.

Candidates who have appeared on intend to appear at any of the above examinations may also apply for admission to this examination. Their applications are accepted provisionally and they have to furnish proof of their having passed that examination as soon as possible and in any case before they join the Academy, if finally selected.

Candidates who have had admission to an earlier course at the National Defence Academy, Air Force Academy or Naval Training Establishment but were removed or withdrawn therefrom are not admitted to this examination. Applications from candidates who were permitted to resign from the Academy etc., on compassionate grounds are, however, considered on merit.

Candidates have to undertake not to marry until they complete their full training. Candidate(s) who marry subsequent to the date of his/their application(s), though successful at this or any subsequent examination are not selected for training and candidate(s) who marries/marry whilst under training are discharged and are liable to refund all expenditure incurred on him/them by the Government. Commissioned officers of the General Duties (Pilots) Branch of the Indian Air Force are not eligible for allotment of married accommodation.

PHYSICAL STANDARDS

1. A candidate must be in good mental and bodily health, and free from any physical defect likely to interfere with the efficient performance of duty in the General Duties (Pilots) Branch of the I.A.F.

2. Height: not less than 64"; Leg Length: Hip to Heel not less than 39"; Visual acuity: 6/6 in one eye and at least 6/9 in the other correctable to 6/6; (**Note**—candidates who wear glasses habitually are to be rejected): Cases of Squint of any degree or Trachoma of advanced stage will not be accepted. Ocular Muscle Balance: Candidates must possess a degree of ocular muscle balance compatible with efficient performance of pilots duties. Field of vision of each eye and the binocular vision must be normal. Colour vision: Normal or defective safe; Hearing: should be able to hear forced whisper from a distance of 20' with each ear separately (other ear being closed); **Note**.—The candidate should not suffer from Chronic Suppurative Otitis Media.

Eustachian Tube :— Both sides must be patent; Urine: Sugar and albumen—NIL; Nervous system and other systems of the body: Normal; General Health: Normal, physically fit; **Note**.—Weight and chest measurements should be according to height and age-group—see table below :

Age last birthday	Height without shoes	Chest		Weight	
		Girth when fully expanded	Range of expansion not less than	Minimum	Maximum
Years	Inches	Inches	Inches	lbs.	lbs.
17½ & 18	64 and under 65	33	2	96	121
	65 and under 68	33½	2	106	131
	68 and under 72	34	2	116	141
	72 and upwards	34	2	126	..
19	64 and under 65	33½	2	98	123
	65 and under 68	34	2	108	133
	68 and under 70	34½	2	118	143
	70 and under 72	34½	2	128	153
	72 and upwards	35	2	138	...

and 21	64 and under 65	33½	2	100	125
	65 and under 68	34	2	110	135
	68 and under 70	34½	2	120	145
	70 and under 72	34½	2	130	155
	72 and upwards	34½	2	140	..

SYLLABUS FOR ENTRANCE EXAMINATION FOR ADMISSION TO AIR FORCE ACADEMY

All papers must be answered in English unless otherwise expressly stated.

Use of scribe shall not be allowed in the Examination.

Papers will be set on the following subjects :—

Subject	Duration	Maximum Marks
1. English	2½ hrs.	300 marks
2. General Knowledge and current affairs	2½ hrs.	300 marks
3. Mathematics I	2 hrs.	150 marks
4. Mathematics II	2 hrs.	150 marks

The standard of these papers will approximately be the same as that of the Matriculation Examination.

ENGLISH—

Questions may be asked on any of the following :—

- An exercise in composition to test a candidate's ability to write simple and grammatically correct English.
- A simple prose passage to be condensed by the candidate with the object of testing comprehension and expression.
- Correction of sentences.
- Reported Speech, questions and commands.
- Use of simple words having similar pronunciation but different meanings and common phrases.

GENERAL KNOWLEDGE AND CURRENT AFFAIRS

The paper will be divided into two parts :

Part A—dealing mainly with Current Affairs and History.

Part B—dealing with Science and Geography.

The following syllabus is designed to indicate the scope of each subject included in this paper. The topics mentioned are not to be regarded as exhaustive and questions on topics of similar nature not mentioned in the syllabus may also be asked. Candidates' answers are expected to show their intelligent understanding of the question and not knowledge of any text book.

PART A

Current events.— Knowledge of important events that have happened in India during the past two years. India's system of Government. Important measures of legislation whether undertaken by the Parliament or State Legislatures. Broad questions of India's policy relating to foreign affairs. Questions set will test the factual knowledge of candidates.

World events of international importance. Important personalities, both Indian and foreign. Sports and other cultural activities of outstanding importance.

Indian History.— Broad outline, knowledge of Indian History. Knowledge of India's ancient culture and civilization as disclosed by monuments, ancient buildings and masterpieces of literature. Growth of self-government. Main stages in the national movement leading to independence.

World History.— Elementary Knowledge of major events in world history. Reforms or national movements such as represented by the French Revolution, Industrial Revolution in the U.K., the American War of Independence, the foundation of U.S.S.R., World Wars I and II, Modern freedom movements in Asia.

PART B

SCIENCE

Physics.— Physical properties and states of matter and simple measurements of mass, weight, density and specific gravity.

Motion of object : velocity, acceleration, force, gravity.

Effects of heat, measurement of temperature, transference of heat, change of state.

Rectilinear propagation of light, phenomenon of reflection and refraction.

Natural and artificial magnets—properties of a magnet.

Electricity, static and current, conductors, and non-conductors, heating, lighting and magnetic effects of currents.

Chemistry.— Physical and chemical changes, elements, mixtures and compounds, chemical properties of air, chemical composition of water. Preparation and properties of Oxygen, Hydrogen and Nitrogen Acids, Bases and Salts : Carbon, Coal, Carbon-di-oxide.

Elementary knowledge of the human body and its important Organs.

Names and uses of common animals, trees, plants, flowers, birds and minerals.

Common epidemics, their causes, means of prevention and cure.

Eminent scientists and their achievements.

Geography

The shape and movements of the earth. Time. Night and Day and the seasons. Climate and Weather—the main climatic and vegetation regions. The Earth's crust, erosion, transportation and deputation, earthquakes and volcanoes. Tides and Ocean currents. Maps.

Human occupations and activities in relation to Geographical factors.

The Geography of India with special reference to the above.

Mathematics

PAPER I

Arithmetic.— Vulgar and decimal fractions and the extraction of square roots. Ratio and proportion, percentage, average, profit and loss, simple and compound interest. Conversions of various systems of weights and measures. Problems involving time and distance (unitary method). Stocks and shares omitted.

Mensuration.— Determination of areas and volumes associated with rectangular blocks, circular, cylinder, cone and sphere. (Practical problems involving these should be given and if necessary formulas may be given).

PAPER II

Algebra.—Elementary basic operations. Use of brackets. H. C. F., L. C. M. Factors. Factors. Remainder Theorem. Ratio and Proportion. Variation. Indices and Surds (Elements only). Equations of first and second degree and easy simultaneous equations involving two unknowns. Practical problems.

Graphs.—Idea of graphs — Interpolation — Solution of easy quadratic and simultaneous equations.

Geometry.—A thorough understanding of plane Geometry with special emphasis on :—

- (i) Properties of angles at a point.
- (ii) Parallel Lines.
- (iii) Angles of triangle.
- (iv) Congruency of triangles.
- (v) Properties of angles, sides and diagonals of a parallelogram, rhombus, rectangle, square and trapezium.
- (vi) Circle and its properties including tangents and normals.
- (vii) Cyclic quadrilaterals.
- (viii) Idea of projection.
- (ix) Similar triangles.
- (x) Practical problems and constructions involving use of geometrical instruments. viz. bisection of an angle and straight line, construction of perpendiculars, parallel lines, triangles, tangents to circles, inscribed and circumscribed circles of triangles.

All other conditions governing the submission of applications, examination and interview are the same as for J.S.W.

PART IV

SECTION D

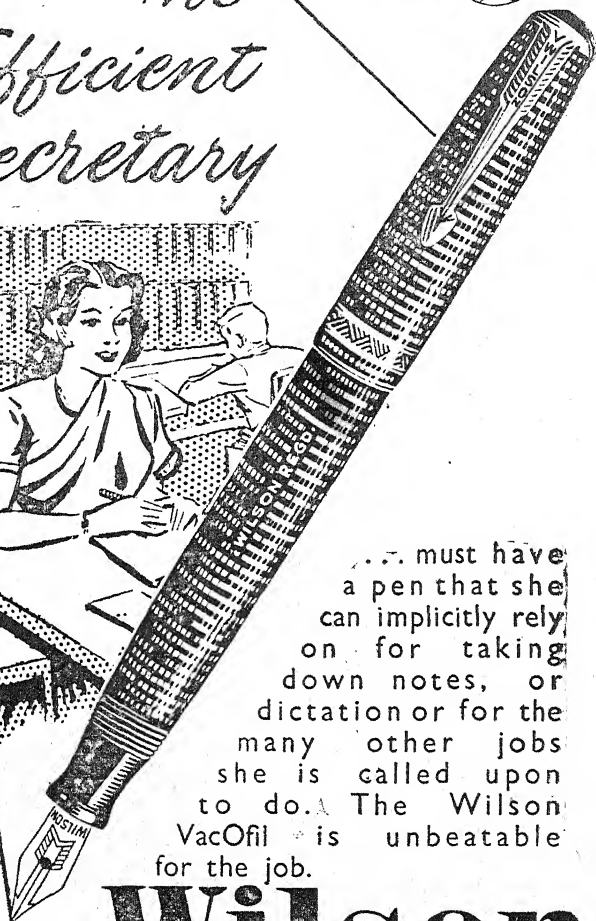
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INDIAN TERRITORIAL ARMY

NATURE AND CHARACTER

Modern War has too wide an effect for its practices to be treated as a "mystery". Statesmen may direct it, Generals, Admirals and Air Marshals may manage its operations but every citizen, man or woman is perforce a shareholder. As warfare has grown from a professional military concern into a national affair, the importance of the citizen soldier as well as the civilian technician has progressively increased.

The Territorial Army is unique among the armed forces of the world. No force, it may confidently be claimed, is so exacting in its demands on its members. The Territorial Army stands between a professional army with the traditions, the conservatism, the exclusiveness which great and highly organised professions generally acquire, on the one hand, and an intensely civilian population, interested in commerce, sport, with rooted antipathy to military discipline and military habits of thought, which finds vent in good humoured fun at the expense of the retired colonels and serving Subedar—majors, on the other. It forms, or at least ought to form, a link between the two. Its members work side by side with men who are civilian pure and simple in offices and workshops, in shops and on the land. It is when the day's work is done or when holiday season arrives, that the Territorial soldier is most sharply differentiated from the remainder of the population, military and civil. Soldiers have leave, civilians, in increasing number of holidays. Both in the evening or at the week-end, are able to relax, to devote themselves to recreation and pleasure. The Territorial is in a different case. He always has to sacrifice some of his evening and week-end leisure. The Territorial has no holiday apart from the annual

training in camp for him there seems to be no respite. The evening after the day's work and the days after the year's work find them on their way to new spheres of work with gun or rifle, lorry or searchlight.

INDUCEMENTS

There is of course the material inducement which does exercise a certain attraction to men who draw the lower scale of wages in the civilian life and to a young unmarried man in a rather better material position but it cannot and as the expert opinion goes it is not the primary attraction or decisive factor for the rates of pay are not sufficiently high. Factors other than the financial are the appeal for the comradeship of camp life, of the social life centering on the drill hall. Camp and drill hall save a man from being lonely, from being too absorbed in himself and enable him to make friends with whom associations will endure long beyond the period when the men can belong to the Territorial Army. There is further certain justifiable, pride in wearing the uniform, if every nice girl loves or should love a sailor, there is at least some cause for hope that in an inland town the Territorial come off second best. There is too the sense of Duty. Actually this should and in most cases this does come first. It is clearly, a very important factor which, in peace time at any rate, it is unwise and undesirable to stress. The man who joins the Territorial Army solely on account of Duty must command and command everybody's respect. If soldier is the man and the patriot a Territorial is much more so because he takes this manly and patriotic duty in addition to his civilian and professional.

INDIAN TERRITORIAL ARMY

The Indian Territorial Army, a little over six years old now has an interesting and exciting history of high hopes pitched against practical difficulties —a story of not very striking achievements inspite of patience, perseverance and sustained efforts. It has not been admitted and it may and perhaps it will not be admitted that the growth and development of the regular army under a foreign authority and devoting to the perpetuation of a foreign rule and to that extent in sharp conflict with the nationalist aspirations of the people, has been a serious handicap. The soldier has not been a citizen or a patriot that he should have been. Besides

there has been a general discipline for military career and the general political education and training and gross misinterpretation of purpose of military life both in peace and war have kept the young men away from the colours. After the dawn of independence and the consequent change of nature and character of the man in the uniform not sufficient has been done to carry him to the people in the remote areas, endear him to them and draw the most suitable of them to the uniforms in other words public education in the real meaning and purpose of Armed Force as defenders of freedom and character builders has been lacking. More and more stress has, of late been laid on this and it is entirely possible that things will change and the Indian Territorial Army will have to tell a different story in the years to come.

PROGRESS

At the outset it was expected that India will have one lakh and a half young men on the list. These hopes were soon unjustified and it became obvious that reaching that target would be an uphill task. After five years all that is claimed is that the Territorial Army has been put on sound footing and has won the praise and admiration wherever it has taken part in public functions or come before the public either on the parade ground or elsewhere.

Reports in the earlier stages of Territorial Army showed that rural areas presented no difficulty and, perhaps, over-subscribed their quota. Big towns with industrial and commercial population, however, became areas of resistance. For the simple reason that the Territorial Army was not a full time and could not satisfy the desire for search for a career it did not appeal to the working or work seeking youths. To add to this came not only indifference but actual hostility by the business community. They looked upon it as a menace and most unwanted and unwarranted encroachment on the normal business activity. To them it was so many working hours lost and so much wages paid for no work done. They, therefore, discouraged and even obstructed young men in their service wanting to join the Territorial Army. They threatened that they would not take back boys in their service who stayed away for longer periods. Matters came to an actual clash when the Territorial Units were called upon to stay in the camps for unspecified periods. Even legislation

making it obligatory on all employers to grant liens on jobs to the boys serving in Territorial Army did not wholly mend matters. Even today the chief requirements of the Territorial Army are technicians for urban units. The personnel of these units can come from the factories, workshops, mills, commercial houses and business concerns. The only redeeming feature is that effort on official level and ever-increasing unofficial level is being made and things are improving gradually steadily though.

TYPE OF UNITS

The Territorial Army has two types of units: Provincial Units recruited from rural areas and Urban Units recruited from large towns. The Territorial Army is composed of all Arms of Service and is open to all able-bodied persons from unskilled labourers to highly qualified technicians, between the ages of 18 and 35. The upper age limit is relaxable in the case of ex-service men and civilians possessing technical qualifications. The Territorials are not required to perform military duties beyond the limits of India except under a general or special order of the Government. Subject to this provision every officer or enrolled person is, subject to such conditions as may be prescribed, is bound to serve in any unit of the Territorial Army to which he is for the time being attached, and is subject to all the rules made under the Act in relation to such units. Every officer or enrolled person is liable to perform military service when called out in the prescribed manner to act in support of the civil power or to provide essential guard, when embodied in the prescribed manner for training or for supporting or supplementing the regular forces either at his own request or under the prescribed conditions.

TRAINING:—Training consists of (a) Recruit which for Provincial units is 30 days annually and for Urban units 128 hours of drill annually to be undergone in the evenings or at the week ends. Exemption from this training is given to ex-service men. **Annual Training:**—Every person who has undergone or has been exempted from Recruit Training is liable to undergo annual training—Provincial Units for two calendar months annually, Urban Units a minimum of 120 hours of drill upto a maximum of 240 hours of drill per annum to be completed in the evenings and at week ends.

Included in this period is an annual camp of not less than four days. (b) Voluntary Training on courses of instruction and attachment to Regular Units.

DISCIPLINE AND USE OF RANKS:— Every officer when performing duty as an officer and every person when called out or embodied or attached to regular forces is subject to India Army Act. Serving officers are entitled to use their ranks at all times. Officers and J.C.O.'s may be permitted, if recommended to retain their ranks. (a) On retirement provided they have rendered satisfactory service. (b) On being invalided out on account of medical fitness.

OFFICERS

Commissions as officers are granted to ex-officers, ex-V.C.O.'s and W.O.'s or their equivalent in the three services and to civil officials under the Central or State Governments and to civilians, who are nationals of the Indian Union, by birth or by domicile or in whose favour a certificate of eligibility has been issued by the Ministries of Home and Defence. Applicants must be above eighteen and should not have attained the age of thirty-five years on the date of application. The upper age limit may be relaxed in the case of ex-officers, J.C.O.s, W.O.s, and civilians possessing technical and medical qualifications.

Application Forms filled up as prescribed are submitted: (a) For Non-Technical Commissions to the nearest Military Sub-Area Headquarters, but in the case of Delhi to Headquarters, Delhi Area, Delhi Cantt. (b) For Technical Commissions to the Area or Command Headquarters (whichever is nearest). Applicants for Army Medical Corps (Territorial Army) and Corps of Signals, direct to the Command Headquarters. Applicants who have applied direct to Territorial Army Directorate will have to resubmit their applications in accordance with the instructions. Officers released from the Regular Forces have to apply direct to the Territorial Army Directorate.

CERTIFICATES:— Certificates of (a) Age, Matriculation certificate or a certificate from a local Magistrate, supported by a judicial affidavit from the father or the guardian of the candidate or other satisfactory documentary evidence. (b) Educational certificates. (c) Technical

certificates. (d) Certificates, where necessary, of nationality or domicile. In the case of Government servants a certificate indicating written consent from the Head of Branch or Department concerned that the applicant will be available for military training and embodiment as and when required by the prescribed military authorities.

SELECTION:—Normally all candidates for non-technical commissions are required to present themselves for interview at Sub-Area Headquarters and those candidates for commission in technical appointments are required to present themselves for interview by the head of the appropriate Corps or Service at Area or Command Headquarters Army (which ever is nearest). Medical and Signals candidates are called to Command Headquarters. The completed applications of all candidates are then forwarded to Territorial Army Directorate and approved candidates are then required to present themselves for interview by an Army Headquarters Selection Board only. No concessions are admissible to the candidates presenting themselves for initial interviews. When called up before Services Selection or Army Headquarters Boards and for final interview and for medical test the candidates are allowed (a) One second class single fare for rail or steamer journey. As. 6 per mile for journeys by road. (b) Daily allowance at Rs. 6 per day when free messing and accommodation is not provided.

PROBATION:—All officers appointed to commissions are on probation for three years. During this period if found unsatisfactory, they may be called upon to resign their commissions and removed if they decline.

PAY AND ALLOWANCES:—An outfit allowance of Rs. 800 is granted on appointment. Ex-officers who have already drawn the outfit allowance once are governed by the conditions laid down in A.I., (I) 57 of 1944. Officers of Territorial Army receive pay, allowances and dearness allowance during authorised training, attachment to regular units, for weekly drills attended and on voluntary courses of instruction. Rates are the same as those obtaining for the Regular Army. Camp allowance of Rs. 5 per day is paid for every day spent on authorised training in Camp, when on voluntary training such as attachment to regular units and when attending courses of instruction.

LEAVE:—Casual leave on Sundays and recognised holidays from attachments, during authorised training and when on courses is granted by the Commanding Officer. On embodiment for service they are governed by Regular Army Rules.

J.C.O.s:—Territorial Army Commissions as J.C.O.s are granted to (a) Ex-J. C., W. O.'s of the three Services, Civil Servants and Civilian Gentlemen subject to the terms and conditions governing other appointments (nationality, domicile, age and physical fitness).

All applications duly completed are submitted to the C.O. of the unit for which the candidates is/are applying who after verification and interview forward the same to Headquarters Army Sub-Area where arrangements are made for suitable candidates for whom the vacancies exist to attend for interview. Originals of age, education, technical qualifications, character and testimonials (discharged certificates in the case of ex-servicemen) have to be produced at all interviews.

PROBATION:—J.C.O.s in the Territorial Army are on probation for three years.

PAY AND ALLOWANCES:—An outfit allowance of Rs. 200 is granted on appointment with a maintenance allowance of Rs. 5 per month for periods spent on authorised training, attachments or courses of instruction. They receive pay and allowances during the same period as per the Regular Army rates of pay.

OTHER RANKS:—Enrolment of N.C.O., and O.R.s is open to (a) ex-N.C.O., and O.R.s of the three services; and (b) Civilians subject to the terms and conditions (nationality, domicile, age) governing other appointments. Candidates have to be 5' 2" in height, possess a minimum of 2" chest expansion, vision without eye glasses not to be less than 6|60 in each eye, provided that with the aid of glasses vision is not less than 6|9 in one and 6|18 in the other.

Application forms are available from all recruiting offices and from Unit Headquarters. Applicants have to obtain (a) in the case of Government Servants written consent from the head of the Branch or Department concerned; (b) in the case of civil employment a written assurance from the employers to that effect that they will be allowed to undergo military training; (c) in the case of released personnel dis-

charge certificate; (d) certificate of technical proficiency (for O.R.s for technical and trades vacancies).

Persons accepted for enrolment are enrolled for a period of seven years with the colours and eight years in the reserve. The colour service may be extended by two years at a time or as may be prescribed to complete a total of 15 years T. A. colour service. Other ranks are issued with free clothing according to the scale laid down in T. A. Regulations. They receive pay at the Regular Army Rates of pay during training (including drills), attachments and courses of instructions.

Different categories of service in the Territorial Army have different educational and technical qualifications as prerequisites to enrolment and should be properly checked up before applying. Physical standards are as under:—

1. Officers

(a) **Medical Officers:**— Should be of Med. Cat. "A".

Other conditions as laid down below are not applicable except that there should be a minimum of 2" chest expansion on inspiration.

(b) **Officers of other Arms:**— To be passed as fit for a commission in the T.A., a candidate must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of military duty. The correlation of age, height and chest girth will not be less than given in the following table:

Age last birthday	Height without shoes	CHEST	
		Girth when fully expanded	Range and expansion not less than
	Inches	Inches	Inches
20 &	62½ & 65	34	2
	65—68	34	2
	68—70	35	2
	70—72	35	2
	72 upwards	36	2½
21 & Upwards	62½ & under 65	34½	2
	65—68	35	2
	68—70	35½	2
	70—72	36	2
	72 upwards	36½	2½

(b) **Vision:**— A candidate will be considered fit if his vision without the aid of glasses is not less than 6|60 with each eye provided that with the aid of glasses, if necessary, his vision is not less than 6|9 in one eye and 6|18 in the other.

A candidate will be considered fit if he has one eye (R. or L.) with vision of not less than 2|60 and with good field of vision as tested by hand movement provided that his vision in the other eye is 6|6 or not less than 6|12 without glasses and capable of correction to 6|6 with the aid of glasses.

Inability to distinguish principle colours will not be regarded as a case for rejection but the fact will be noted in the medical board proceedings and the candidate will be informed.

(c) Candidate's hearing must be good.

(d) His speech should be without impediment.

(e) His teeth should in good order. — He must have ten sound teeth in the upper jaw functionally apposed to ten sound teeth in the lower jaw. Two of these teeth in each jaw must be molars and missing teeth, if any must be made good by artificial dentures. Well-fitted teeth will be considered as sound.

2. J. C. Os. and O. Rs.

(a) Standard minimum height, expanded chest measurements and weight for recruits of 18 years and over for Territorial Army is as under :

Arm/Corps	Height	MEASUREMENTS		Weight
		Expanded chest	Range of expansion not less than	
Royal Indian Artillery	5' 4"	34"	2"	120 lbs.
Royal Indian Engineers	5' 4"	34"	2"	120 lbs.
Infantry	5' 3"	34"	2"	115 lbs.
Armoured Corps	5' 3"	34"	2"	115 lbs.
Corps of Indian Signals	5' 3"	34"	2"	115 lbs.
Indian Elect. and Mech. Engineers	5' 3"	34"	2"	115 lbs.
Royal Indian Army Service Corps	5' 3"	34"	2"	115 lbs.

MEASUREMENTS

Arm/Corps	Height	Expanded chest	Range of expansion not less than	Weight
Indian Army Medical Corps	5' 2"	33"	2"	112 lbs.
Indian Army Ord. Corps	5' 2½"	33½"	2"	115 lbs.
Others	5' 2½"	33½"	2"	115 lbs.

Note. — For all Arms/Corps. — Minimum measurements for Gurkhas and Assamese will be as under :

Height 5' chest (expanded) 33", range of expansion 2", weight 112 lbs. For Madrassis expanded chest — 33" in all cases, provided the range of expansion is not less than 2".

(b) Physical Fitness :

- (i) Recruits must be sufficiently intelligent.
- (ii) Hearing must be good and the recruit should have no sign of ear disease.
- (iii) His speech should be without impediment.
- (iv) He should not have glandular swellings.
- (v) His heart and lungs should be sound.
- (vi) He should have no congenital defect or deformity.
- (vii) He should have perfect movements of all joints.
- (viii) He should not bear traces of previous acute or chronic disease pointing to an impaired constitution.
- (ix) Visual standard :

Infantry	}	Right eye	6|12	right	6|6.
Artillery				or	
I. A. C.	}	Left eye	6|12	left	6|36.
Engineers,					
I. A. O. C.,	}	Right eye	6|24	right or better eye	6|12.
R. I. A. S. C.				or	
& Others.	}	Left eye	6|24	Worse eye	6|36.

(c) Men presenting the following conditions will be rejected :

- (i) Indications of T.B.

- (ii) Indications of V.D.
- (iii) Valvular Disease of heart.
- (iv) Otitis media.
- (v) Deafness partial or complete.
- (vi) Pronounced stammering.
- (vii) Loss or decay of teeth to such an extent as to interfere with efficient mastication.
- (viii) Contraction or deformity of chest.
- (ix) Abnormal curvature of spine.
- (x) Mental or nervous instability.
- (xi) Deformity of feet.
- (xii) Hernae and Varicocele.
- (xiii) Enlargement of spleen or liver.
- (xiv) Trachoma.
- (xv) Severe pyorrhoea.

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THE NATIONAL CADET CORPS

The idea of a 'Nation in Arms' was first conceived during the French Revolutionary Wars. It was, however the world war of 1914-18 which demonstrated positively and conclusively that wars could no longer be restricted and confined to the fighting lines leaving the rest of the population in peace. The West being the actual theatre of war the realisation there was earlier and action more vigorous.

The World War of 1939-45 was the first to bring the Indian people in actual contact with the realities of a modern war. It is said that the ultimate objective of the Axis powers was to link up their western and eastern offensive inside the Indian borders. Japan had actually advanced through South East Asia and Burma and invaded Eastern Bengal. Threat of invasion to Vizagapatam and Madras had led to the evacuation of the areas. Besides heavy recruitment of Indians to the officer grades in the Defence Services had brought the upper and middle classes into physical contact with the war.

India was still under the British Imperialist domination and there was a powerful section of public opinion in the country not favourably disposed to recruitment of Indians in the Armed Forces. In spite of this the number of applicants to the forces was considerably high. Difficulty, however, was that a great proportion of these applicants were lacking in the necessary qualities of initiative, self-confidence and sense of responsibilities and took unduly long time in the training centres. This brought to the forefront the idea of some schemes which could train and equip a larger number of younger people even during peace who could in times of emergency successfully fill the officers jobs.

With a view to serve as a foundation to the Indian Territorial Force and also to provide potential officers material

to the Armed Forces the University Officer's Training Corps was instituted in 1925. It was, however found that U.O.T.C., had failed to fulfil the purposes for which it had been founded. The National Cadet Corps Committee, constituted in 1946 under the Chairmanship of Pt. H. N. Kunzru, which investigated the cause of the failure said: "Training Corps did not receive their share of attention from the Defence Department and the standard of officers sent to them since 1939, as adjutants and instructors was low". A Committee was appointed to reconsider the whole problem and to make recommendation for the establishment, on a national basis, of a Cadet Corps Organisation in both Schools and Universities. The Committee submitted its report in March, 1947.

In August, 1947, INDIA got her freedom and the whole context of the situation in the country changed. The National Government which moved into positions of power and authority was faced with an extremely difficult and delicate situation arising out of partition and the movement of millions of people across the new frontiers. It was only in early 1948 that the Government decided to implement the recommendations of the Committee and action was taken to have an act passed by the Parliament. The N.C.C. came into being on the 15 July, 1948.

AIMS AND OBJECTS

The aims and objects of the N.C.C., as laid down in the Act were as under :—

1. To develop character, comradeship, the ideal of service and capacity of leadership in young men and women.
2. To provide service training to young men and women to stimulate interest in the defence of the country.
3. To build up reserve of potential officers to enable the Armed Forces to expand rapidly in national emergency.

The main feature of the N.C.C., was that the membership was entirely voluntary and there was no liability for military service.

ADVISORY COMMITTEES

In accordance with Section 12 of the Act a number of Advisory Committees are set up to advise on matters affecting

the running of the National Cadet Corps. The Central Advisory Committee with the Defence minister as the Chairman advises the Central Government on all matters on policy connected with the constitution and administration of the Corps. The State Advisory and Senior Advisory Committees make recommendations and tender advice to the Central Government and to the State Governments upon the matters like the formation of new units and establishment of existing units, improvement of training facilities for cadets, the general welfare of officers and cadets and such other matters as may be referred to them by the Central or State Government or the Director of Corps.

POSTINGS — O. C.s etc.

In October 1949 subordinate organisations designated N.C.C. Circles' were set up. The country was then divided into eight circles, each under a Lt. Col. or a Major of the Regular Army. The Circle Commanders are in close touch with the Vice-Chancellors of Universities and State Governments under each Circle Commander one or two Regular Army Officers are posted to supervise the training and administration of all Junior Division units located within the Circle. Officers of N.C.C., Army Wing are also posted on these duties and are employed on same terms and conditions as the regular Officers. Every Senior Division unit is commanded by Regular Armed Forces Officer and is specially selected for the purpose by the Service Headquarters. The officers of N.C.C. are eligible to take command of the unit during the absence of the Commanding Officer for more than ten days.

JUNIOR DIVISION:—The primary object of the Junior Division is educational and the organisation is designed to build up character and physique of the cadets, to infuse in the sense of discipline and stimulate their interest in the defence of the country. Junior Divisions are raised in High Schools and Public Schools and boys to be enrolled as cadets have to be of a suitable age to derive maximum benefit from the training given to them. The 1954 report of the Directorate of National Cadet Corps has put the figures in this division as 1,600 officers and 52,000 cadets. The Directorate hopes that the Junior Division will be able to supply all the cadets for the Senior Division and thus ensure continuity of training

for a period of seven years. To enable this to be done, Army, Navy and Air Force units have been raised in the Junior Division corresponding to similar units in the Senior Division.

SENIOR DIVISION:—The aim of the Senior Division is to provide training and leadership which will be of the greatest benefit to the cadet in all walks of life. This, it is expected, will also help in building up a potential reserve of officers of the three Armed Services.

Since academic studies are regarded of supreme importance to the members of the Universities and colleges, service training is, therefore, carried out in such a way as not to interfere with academic work. The maximum tenure of service of a cadet in this Division is four years and this corresponds to the period which the students normally spend in the Universities in the country.

The Senior Division is composed of three wings:—The Army, the Naval and the Air Force Wings. The Army Wing is raised on the same lines as the Regular Army, Infantry, Armoured Corps, Artillery, Engineers, Signals, Infantry, Electrical and Mechanical Engineers and Medical Corps. The latter two are raised only in engineering and medical colleges. In addition to the normal training cadets interested in the technical subjects can join technical units where they receive specialised training. The naval units are of necessity raised in places where facilities for naval training are easily available. In the Air Wing Units theoretical and practical flying and gliding training is imparted and with the help of flying clubs cadets obtain 'A' Flying License at Government expense.

The Senior Division is extremely popular with the college students which testifies to their desire to be fully defence conscious and prepared for every emergency. The 1954 report has put the strength of this Division at about 700 officers and 27,000 cadets.

GIRLS DIVISION:—The object of the Girls Division is to develop the personality of the girls, to make them more self-reliance, to build up their physique and to enable them in national emergency to take upon themselves some of the duties normally carried out by men. The 1954 report has placed the strength of this division at 25 officers and 100 cadets. Since the division is becoming increasingly popular with the young women it is hoped that more units will be raised before long.

SOME ASPECTS OF TRAINING

GENERAL:— The N.C.C., undertakes the training of youth between the ages of 13 and 26. The training during this period is properly planned, is progressive and interesting.

Officers and cadets of the N.C.C., do not have to bear any expenditure in connection with their training. They are issued with free uniform and equipment and all expenses on account of messing and amenities for them during their camps are met by the State Governments. The staff for their training and supervision is provided from the ARMED FORCES BY THE CENTRAL GOVERNMENT. The ARMED FORCES being most vitally interested in the success of the undertaking take every care to provide the very best and ensure that mistakes of U.O.T.C. are not repeated.

Cadets are given a minimum of four hours training a week and in order to achieve the fullest benefit, training is carried out when the cadets are not tired physically or mentally. Besides this normal training, the cadets have to attend annual camps lasting for a period of 10 to 15 days. Special camps are also held for selected senior cadets likely to make good instructors and hold cadet appointments. A common syllabus ensures uniformity in training throughout the Corps and practical examinations are held periodically to test cadet's knowledge in the subject taught. This helps to assess their potentialities as leaders. As a reward of their work and in order to motivate and maintain their interest, candidates successful in such tests are awarded certificates. To foster team spirit, competitions are organised in different subjects such as drill, shooting, turn out and camp administration.

DISCIPLINE:— Discipline amongst the students is probably the most important item in any programme of youth welfare activity in a modern civilised State. This is particularly so in India where lack of such discipline has been repeatedly resented and regreted by some of the highest placed in the Government and public life. The training in the N.C.C., has been particularly designed to instill in the cadets a sound sense of discipline and thereby enable them to contribute their very best to the national development. The achievements of the N.C.C., in this respect are perhaps the most commendable and a young man from the N.C.C., has proved to be delightful and proud exception to the general mass of students who have not been to the N.C.C.

LEADERSHIP:— The essential element of leadership is the ability to impress, carry and command. These qualities are nowhere more important than in the Armed Forces where men to lead hold in their palms the question of life and death of millions and actually the very destiny of the nation. There may be few, who are born with extravert and ascend at traits, while a vast majority require these to be put into them through cultural and social conditioning. There is no better ground for the growth and development of leadership which grows through inter stimulation of membership in a group than the N.C.C. Training syllabus has been paid particular attention and the results have been more than satisfactory.

HEALTH:— Apart from the considerations of WARS, it has been universally recognised that military training is essential for physical fitness which in turn is responsible for proper and befitting contribution of an ambitious youth to other walks of life. The importance of this in the context of conditions in India can never be over-emphasised and therefore the role of N.C.C., ever exaggerated. In N.C.C. the development of physical health is encouraged by every possible means. By exercise, by games and sport and by other means of healthy recreation.

CORPORATE LIFE:— The N.C.C. has made a vital contribution in the development of corporate life and broadening the outlook of the youth. To a very large extent it has broken or weakened the sense and spirit of communal, provincial and regional isolation. In times to come the N.C.C. will emerge as the most powerful factor in fostering a sense of national unity for which there has been a crying demand all these years.

SOCIAL SERVICE:— Social service has been recognised by the Government as an essential feature of all youth welfare schemes. There is no field of activity where greater importance to this aspect is given than the N.C.C. There is also no other organisation which can claim to have done more in this respect on—(1) teaching the cadets the dignity of labour and creating in them an interest in the constructive work which has proved to be of immense use to the country; (2) setting examples of selfless work and team spirit; and (3) giving lead in organised work with a view to utilising to the maximum possible extent, the available unused time, energy and resources and to direct them into various fields of social and economic activity.

During the past years cadets of N.C.C., have organised and conducted scores of Combined Social Service Camps in various parts of the country. In 1953-54 they had eleven such camps attended by 200 officers and 7,180 cadets who put in 8,29,936 man-hours of work. The total quantity of earth work done in these camps was in the region of 32 lakhs cubic feet. The construction of roads, tanks, canals, desilting of blocked up irrigation drains, building low cost houses and tenements, socio-economic surveys, literacy drives, medical aid and flood relief work was also undertaken. In addition to the organised camps the N.C.C. has also done similar work in their annual camps.

EXPANSION:— The N.C.C. has proved its merit and earned its popularity with the youth. The Government reports show that there is consistent and every increasing demand from educational institution for a large scale expansion of the National Cadet Corps. The Government have, however, proceeded on their own plan limited by the funds that can be made available and also that quality is not sacrificed while securing the quantity.

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SERVICE TO THE COUNTRY

AUXILIARY CADET CORPS

In order to meet the very growing demand for some sort of training inculcating discipline, team spirit, social service, dignity of labour and qualities of leadership in the youth yet another scheme, comparatively less expensive and accommodating a larger number of persons has been introduced by the Government. This is the Auxiliary Cadet Corps with 'SERVICE TO THE COUNTRY' as its motto. In view of the experience gained by the Directorate of the N.C.C. the responsibility of A.C.C. has also been entrusted with them.

OBJECTS

The objectives of the A.C.C. have been laid down as under:—

1. To build up the youth mentally, morally and physically and to make them good and disciplined citizens by developing their character and capacity for leadership.
2. To develop in them a sense of patriotism.
3. To develop team spirit, corporate life and self-confidence and train them for social service.
4. To teach them the dignity of labour.

ADMISSION

All students—boys and girls—above the age of 12 are eligible for admission to the A.C.C. in their respective institutions. They have no liability for service with the ARMED FORCES. They are required on joining the A.C.C. to take the following pledge:—

"I.....do swear by Almighty God|solemnly affirm that I will, as in duty bound, honestly and faithfully carry out the aims and objects of the A.C.C. and that I will, to the best of my ability, attend all parades and camps which I will be required to attend by my Commanding Officer".

No specialised instructors are posted for this training. Teachers, particularly the P. T. instructors, undertake the responsibility for whom special courses are run. Elaborate and special equipment is not required for imparting this training. In order to develop esprit-de-corps, the provision of a uniform has been considered essential which again is very simple. The uniform for men and boys is a pair of Mazri Shorts, a Mazri Shirt and a pair of army pattern brown or white canvas shoes. A Mazri cap and grey socks have also been included as optional items. For girls division the uniform is (a) White Salwar and white Kamiz or (b) white blouse and white skirt or (c) white blouse and white saree with a simple blue border, 1½" wide.

TRAINING

GENERAL :— The training syllabus which has been laid down for the Junior Division of the Army Wing of the N.C.C. is followed in the A.C.C. Training in following subjects is however actually given:—

MASS PHYSICAL TRAINING:— All the members of an institution who participate in the A.C.C. activities are paraded together and carry out mass P. T. thrice a week, the duration of each period being 40 minutes.

MASS DRILL:— Junior Division, N.C.C., Army Wing, without arms is followed. Mass drill is carried out three times a week each period being 40 minutes duration.

ROUTE MARCHES:— Once a month for the entire institution. This can be combined with the monthly week end camp when visits to places of historical or other interest may also be arranged. The distance covered should not be less than 3 miles and more than six miles each way.

TEAM GAMES :— Four times a week each period being of 40 minutes duration. Indian games are encouraged as they can be arranged without the use of any equipment.

CITIZENSHIP:— Lectures on the (a) Salient features of our constitution. (b) Dignity of labour. (c) National flag. (d) Blessings of freedom. (e) Value of service and sacrifice for the country and society. (f) Duties towards society (civic responsibilities). (g) Discipline and moral, and (h) Public health are arranged.

ELEMENTARY FIRST AID:— Instruction in (a) Elementary bandages. (b) Treatment of cuts, bruises and burns. (c) First aid for snake bite. (d) Artificial Respiration. (e) Improvised methods of carrying the sick and wounded. (f) Removal of foreign bodies from the eyes, ears, nose and throat. (g) First aid for sprains and fractures is given.

SANITATION & HYGIENE:— Instruction in (a) Cause and prevention of various types of diseases. (b) Personal Hygiene. (c) Purification of drinking water. (d) Principles of field hygiene. (e) Disposal of garbage and refuse. (f) Improvised latrines and urinals is given.

SOCIAL SERVICE & MANUAL LABOUR:— Training in this subject is organised by starting with tasks like the cleaning of school/college building, compounds, gardens and playing fields in organised bodies. Such work is undertaken in the evening or on Saturday afternoons.

During holidays working parties on a voluntary basis are encouraged to undertake tasks like the building of roads, anti-malarial work and wherever possible participation in the Grow More Food and village uplift campaigns. During long vacations large scale working parties to assist in local community projects are encouraged or organised.

FIRE FIGHTING:— Wherever possible training in fire fighting is given and for this purpose assistance of the local Fire Fighting Services is taken.

SWIMMING & LIFE SAVING:— Wherever facilities are available students are given training in swimming in organised bodies and in rescue work concerned with it.

CROWD CONTROL:— The help of local police authorities is sought to teach the students methods of controlling crowds resort to force. Whenever large scale function e.g., melas etc. are held, units of the A. C. C. are utilised for the purposes of controlling and regulating assembled crowds.

CAMPS:— The object of the A.C.C. camps is not merely instructional or educative. These camps are also intended to give opportunities to individual to spend some time out in the open. Week end camps are only of a day's duration. Term end camps for 3 days. These camps take the form of excursions and training includes both military training and

social service work. All individuals erect their own bivouacs for these and cooking in camp is organised in the camp just as in Boy Scouts Camps. The local N.C.C. units render all possible assistance in organising such camps and in providing instructors for imparting military training.

ORGANISATION

All Masters/Lecturers of the institutions are training in P.T., March Drill, and First Aid in the first instance. They are also given instructions in the methods of coaching which they have to employ as coaches and instructors. Since there is no fixed tenure of service with A.C.C., no fixed syllabus has been laid down as in the case of N.C.C. There is bound to be certain amount of repetition and the instructors are expected to use their own imagination in planing and training and avoid this repetition and make the course as interesting as possible.

RANKS AND BADGES

Each A.C.C. Cadet has to wear A.C.C. Crest on the left hand side of the shirt front. Following badges of rank are also worn above the A.C.C. Crest by those entitled:—

(a) Sub-Section Sergeant Ashoka Chakra (c). (b) Section Leader :— Two Ashoka Chakras. (c) Deputy Group Commander :— 3 Ashoka Chakras (d) Group Commaader (I. Ashoka Lions.)

All the above badges are printed on cloth and stiched on the shirts.

NATIONAL VOLUNTEER FORCE

On November 12, 1954, the Central Advisory Committee for the Territorial Army and the Auxiliary Territorial Force met at New Delhi under the Chairmanship of the Prime Minister and reviewed the progress of both organisations. The I. T. F. was started in 1953, as an experimental measure, to give elementary military training to "as large a number of people as possible". At the camps held in various parts of India about 13,000 men had received training. The scheme had proved popular and its working had demonstrated that there was a demand for such training among the people. It was, however, felt that the period of training, which was seven days for the I. T. F., and latter increased to ten days, was not sufficient to produce any lasting effect and if the benefits that the people derived from the I.T.F., training had to be enduring, the period of training had to be extended.

The Central Advisory Committee, therefore, recommended that the training should be of one month's duration. It also recommended that the scheme should be revised in order to bring within its scope a much larger number of people and the Force should be called the National Volunteer Force.

In pursuance of these recommendations Government decided to discontinue the I.T.F., and to have in its place the National Volunteer Force, under which training should be imparted to 500,000 men in five years, at the rate of 100,000 men per year.

It has, however, been made clear that the object of the scheme is not to raise a force for the defence of the country nor to make soldiers out of the people training under the scheme. Its main purpose is to inculcate a sense of discipline among the people through military training and to give them the feeling of self-reliance. At the same time the training should help to create in the trainees an urge for national

service by bringing them in close contract with national development efforts at different places. With this object in view the NVF camps will be held, as far as possible, in Community Project or National Extension Service areas. Military training has been adopted only as a means to an end and as the quickest and most effective methods of disciplining a people. There is neither any effort at militarisation nor any programme of a defence build-up.

Persons who receive NVF training have no liability for military service or any other compulsory service. They will, however, be encouraged to volunteer for national service when called upon to do so. It is also proposed to issue certificates of merit to outstanding trainees.

All able-bodied Indian made citizens (except ex-Servicemen and ex-NCC cadets) are eligible to join the National Volunteer Force, provided they are between 18 and 40 years in age.

The training in the National Volunteer Force includes firing a rifle, drill with out arms, P.T., rifle training, hygiene, first aid and elementary field engineering. Education classes will also be held and these will be of two types : one for literates and the other for illiterates. In the latter class, Hindi will be taught to the trainees while in the class for literates, lectures will be given on subjects such as, Five Year Plan, Community Project, Village Panchayats, organisation of a civil district, functions of State and Central Governments etc., Lessons in first-aid will include treatment of wounds, fractures, burns, dislocation, heatstroke and frost bite, small and insect bite and such other ailments as the trainees are likely to come across in their day to day life.

While under training the trainees are subject to the camp discipline but are not governed by the Army Act. It is, however, borne in mind that the trainees being new to this kind of discipline and may find it irksome in the beginning. Those in charge of the training camps have therefore been instructed that the camp orders should be properly explained to the trainees and the staff should ensure that they have been properly understood.

The trainees are issued clothing and other necessary articles which are withdrawn on the conclusion of the

camp. Each trainee is given Rs. 15/- as out-of-pocket allowance at the end of the camp.

The maximum authorised strength of each camp is 500 men. The first 34 camps started functioning on May 1, to be followed by other camps until March 31, 1956. For this purpose 34 Army teams selected out of ex-Servicemen will move from one place to another until the total of 200 camps have been completed. At the conclusion of each camp the officers commanding will forward progress reports to the authorities concerned who will thus be able to assess the extent of public enthusiasm in regard to this NVF scheme.

Besides the programme of training given above, facilities are provided to those, who join the National Volunteer Force, for sports and recreation at the camps. While in camps trainees get free rations and clothing, and are entitled to free medical treatment.

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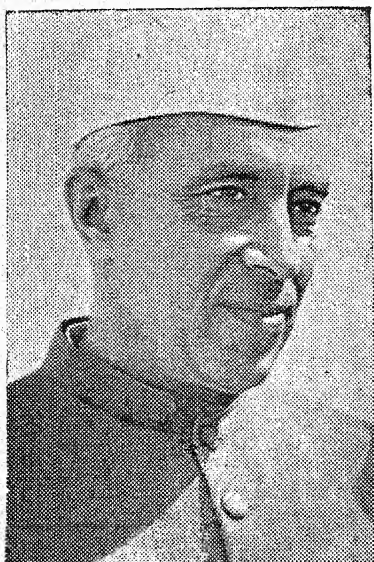
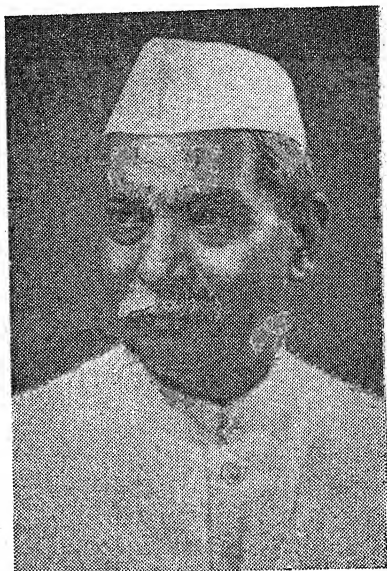
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Second Line of Defence

APPENDIX

Our Merchant Navy
Mechanised March of Time

DR. RAJENDRA PRASAD
President of the Republic
and Supreme Commander
of the Indian Armed Forces.



JAWAHARLAL NEHRU,
Prime Minister and Defence
Minister before Dr. K. N.
Katju.

DEFENCE MINISTRY



DR. KAILASHNATH KATJU,
Minister of Defence.

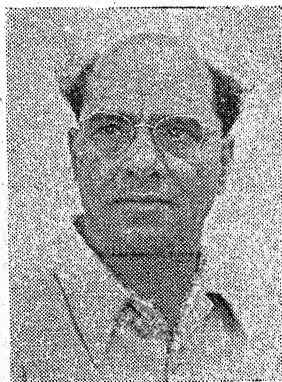
Believes firmly that Indian Armed Forces are second to none in the world in work and discipline, efficiency and performance. Proposes to introduce shortly a self loading rifle in the armed forces. Born June 17, 1887. Educated in Barr High School Jaora (C.I.), Former Christian College, Lahore, Muir Central College Allahabad.

Got his L.L.D., degree at Allahabad University. Member Council of U. P. C. C. and A. I. C. C. till 1946. Editor Allahabad Law Journal (1918-1946) Governor of Orissa August 1947 to June 1948.

SRI MAHAVIR TYAGI,
Minister for Defence Organisation
and Chairman of the Defence
Production Board.

Recently toured the U.K. and U.S.A., and other countries to study Defence Production Organisations there. He told the Lok Sabha on December 6 that a plan for production of modern arms for the Ordnance Factories was

under preparation on the basis of the planned requirements of the forces over the next five to ten years. Born in 1900. Educated privately. Courted imprisonment eleven times for Congress activities. Member A. I. C. C., Constituent Assembly of India. 1941-1949; Provisional Parliament 1950. Organised Tyagi Police U.P. 1947.





SARDAR SURJIT SINGH MAJITHIA,

Deputy Minister for Defence.

Son of late Sir Sunder Singh Majithia and a former Air Force Officer.

Born August 8, 1912 at Simla. Educated Chief's College Lahore, Khalsa College Amritsar, Law College and Govt. College Lahore

M.L.A. Central 1945 to 1947. Indian Ambassador to Nepal 1947 to 1949. Returned to the House of People from Tarn Taran Constituency, Punjab. Recreations : Wireless transmission, Agriculture, Flying, Sports.

SATISH CHANDRA,

Deputy Minister for Defence.

The man who has risen from the ranks of the Indian National Congress is a patriot through and through. In his earlier days was active member of various youth organisations and is still an enthusiastic patron of youth movements.

Born January 17, 1917 at Bareilly. Educated Govt. Agri. College Kanpur, Bareilly College. Joined Congress in 1936, courted jail several times for Congress activities. Member Indian Constituent Assembly 1948-50. Ex-Member Food-Grains Investigation Committee Govt. of India; Central Board of Archaeology; Central Advisory Council for railways, Parliamentary Secretary to the Prime Minister 1951. Returned to the House of the People from Bareilly District, South Constituency, U.P.



RETIRED FROM "SERVICE"



General K. M. CARIAPPA,
First Indian Commander-in-Chief of Army after Independence. Now Indian High Commissioner in Australia. Staunch advocate of the famous four points: "Morale, Economic Stability, Industrial Self Sufficiency and a nation of All People".

**General MAHARAJ RAJENDER
SINHJI.**

Succeeded General Cariappa as Commander-in-Chief, Indian Army in January 1953. First D. S. O. in the last War. General Rajender Sinhji belongs to the house of Navnagar, and is the first cousin of Jam Sahib of Navnagar, the present Rajpramukh of Saurashtra. He is now 56 years of age.



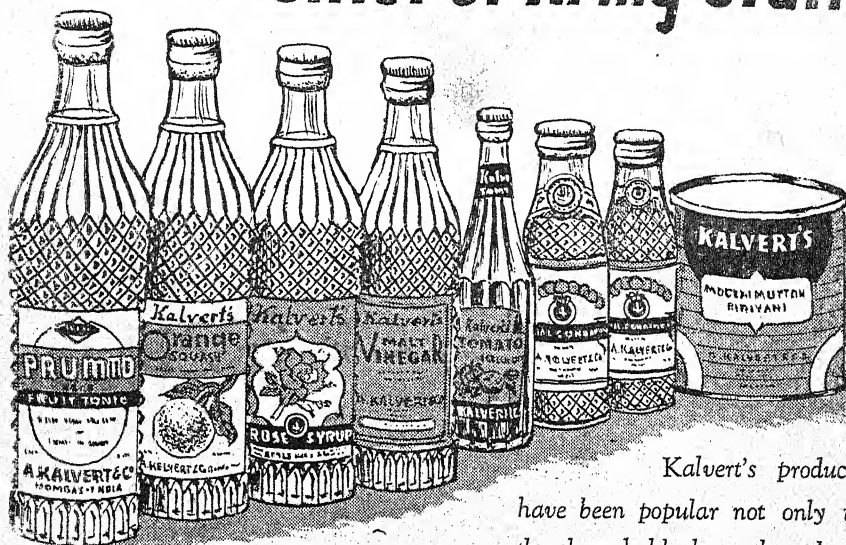
Vice Admiral C. T. M. PIZEY,

Appointed Commander-in-Chief Indian Navy, in October 1951. Before coming to India he was in Command of the first Cruiser Squadron in the Mediterranean sea. He was promoted to the Rank of Admiral on December 16, 1954. He retired from Indian Naval Service in 1955. He is now again with the Royal Navy.



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Chief of Army Staff*



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General S. M. SHRINAGESH,
Chief of Staff, Army.

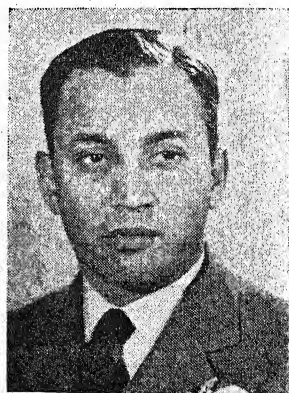
Commissioned in 1923; he was among the earliest batches to be nominated for Sandhurst, and he won the Quetta Cup for the best Man at Arms entering the Indian Army for his year. Was selected to go to Germany as Deputy Chief of Indian Military Mission in the year 1945. In 1950, he was promoted to the Rank of Lieut-General and was appointed overall Commander of all troops in Jammu and Kashmir. After his appointment as Chief of Staff Army, he visited U.K., U.S.A., and several other countries. In U.S., he was awarded the "Legion of Merit" which is the highest decoration awarded to a visiting officer.



**Vice-Admiral CARLILL,
Chief of Naval Staff.**

Prior to his assignment, he was the Flag Officer of the Home Fleet Training Squadron. During his service in the Royal Navy, he held a number of important appointments and was awarded the D.S.O. for his skill and enterprise in action against enemy submarines. He was also mentioned in despatches for operations in the Adriatic in 1944.

From 1949 to 1951 he commanded H.M.S. Excellent, Royal Navy's Gunnery School, and then held the command of the Aircraft Carrier H.M.S. Illustrious. Later he served as the Senior Naval Member of Directing Staff of the Imperial Defence College. In 1954, he was appointed Companion of the Most Honourable Order of the Bath (C.B.).



**Air Marshall S. MOOKERJEE,
Chief of Air Staff**

One of the first Indians to be selected and Commissioned as a pilot in the Indian Air Force. He completed his training at the Royal Air Force College, Cranwell, in 1932. He had the honour of Commanding the first Air Force Station in 1943. He was the member of the National War Academy sub-committee in which capacity he visited the United States, Canada and Great Britain. Only this year he visited the Soviet Union and met all the high ranking officers of that Country. He is the first Commanding Officer from India to visit the Soviet Union.

SENIOR OFFICERS

**Lt. Gen. K. S. THIMMAYYA,
G. O. C. in Chief Southern
Command.**



One of the first 32 Indian Boys who entered the Royal Indian Military College, Dehra Dun, in 1922. He was subsequently at Sandhurst and was Commissioned in 1926. He was the first Indian to lead an infantry brigade in action during the last war. He represented the Indian Army at Japanese surrender to the Supreme Allied Commander, South East Asia at Singapore in September, 1945. He represented

the Indian Army at the independence celebrations of the Phillipines on 4th July, 1946 at Manila. Served as a member of the Armed Forces Nationalization Committee w.e.f., December, 1946. He commanded an infantry division in Kashmir in 1948, and became Quarter Master General in 1951. In September 1953, he proceeded to Korea, as Chairman of the Neutral Nations Repatriation Commission. On his return to India in April 1954, he was awarded the Padma Vibhushan. (Dusra Varg.).

**Lt. General KALWANT SINGH,
G.O.C. in Chief Western Command.**

The organising genius of the Jammu and Kashmir Forces, that stemmed the first treacherous assault of the raiders and later not only held the enemy in check but also contained all the vital points.

General Kalwant Singh, passed out from Sandhurst in 1925 and was the first Indian to enter the staff college Quetta in 1935. On the eve of freedom, he was appointed Director of Military Training, Army Head Quarters, India. In 1948, he became the Chief of General Staff and later a Corps Commander with the local rank of Lt. General.



**Lt. Gen. SANT SINGH,
G. O. C.,-in-C., Eastern Command**

Commissioned in 1925. Commanded free selection officer's training school in 1947, and Commander of 43rd (terried) Brigade in September 1947. He became General Officer in Madras area in 1947 and fourth infantry division on Jan. 15, 1948. Before his present appointment he was Master General of Ordnance.



**Rear Admiral SIR ST. JOHN
TYRWHITT,**

Flag Officer Commanding Flotilla.

Born in April, 1905, entered the Royal Navy in Jan. 1919. Until the outbreak of the last war he had several commands ashore and afloat. During the war he saw active service in various operations. For a short time 1941 to 42, he served in the operational division of the

Admiralty. Later he commanded the destroyer TARTAR. In 1944 he was awarded a Bar D. C. C., for outstanding courage, resolution and leadership. His services to the Indian Navy are on loan by the British Admiralty.

Addressing the passing out parade of the cadets at the National Defence Academy on December, 6 he said 'It was customary not long ago, for successful cadets to look forward to active duty after passing out. But wars had wrought great havoc and he would not wish them to hope for another. However, they (cadets) must be on the look out for any opportunity which may come their way, either in the field or elsewhere. They should sieze it with both hands because theirs was a life of venture.'



Commodore RAMDASS KATARI,
I.D.C., I.N., Deputy Commander-
in-Chief and Chief of Staff, Indian
Navy, since March 1954.

He had his training in Training ship
IN "DUFFERIN" Bombay, Hoogly
River Survey for a few years; the
Indian Navy War service in Atlantic
and Indian Oceans; Several sea
Commands service. Chief of

Personnel at Naval Head Quarters 1949-1951 Imperial
Defence College, London 1953. Led Indian Military
Mission to Indonesia.

A. K. CHATTERJEE, I.N.

Commander-in-Charge Bombay.

Joined the Royal Indian Navy
1933, and qualified as a specialist
in the U. K., in 1940. Com-
pleted the staff course in U. K.,
in 1947. He was appointed
Director of Naval Plans at Naval
Head Quarters. In 1950 he

became the first Indian Naval Officer to Command the Flag
Ship I.N.S. DELHI. He is the Fourth Indian Naval Officer
to be promoted to this rank.





Maj. Genl. K. P. DHARGALKAR,
 Alternative Chairman International
 Supervisory and Control Commis-
 sion, Indo-China.

Born and educated in Bombay. He was commissioned to the Indian Army in 1931. He was taken prisoner of war by the Japanese in 1942 and was released from captivity at the end of 1945.

After the police action in Hyderabad and on termination of Military Government, he was placed in charge of operations. He weeded out anti-social elements in that State. He was in Command of Bombay Area in 1953.

Vice-Air-Marshal C. M. ENGINEER
 Deputy Chief of Air Staff.

Educated at Panchgani and later D. A. Sind College, Karachi. Had his service flying training at Cranwell and won the Groves Memorial prize for the first alround pilot of the term. Later he secured the first position in the Army co-operation course at Old Sereum (in U. K.). After filling several appointments at Air Headquarters, he Commanded the Air Forces Station at Kohat. He completed his course at Imperial Defence College and served as Air Officer in Charge Tech. and Equip. at Air Headquarters.





Major General S. P. THORAT

For the first time in history the Armed Forces of a country left national shores for peace abroad. It was a difficult and a delicate mission but was accomplished admirably well. The credit of this, amongst others, goes to Major General S. P. Thorat, Commandant of Custodian Force in Korea.

Air Commodore, D. A. R. NANDA, A. O. C. Operational Command.

Commander Nanda was first Commissioned in the Indian Army in 1935. In 1938 he was seconded to the I. A. F. and served with the No. 1, I. A. F. Squadron. He had his staff training at the Staff Training College at Quetta. After partition he was given Command of I. A. F. Base Repaid Depot at Kanpur. Later



he was appointed Director of Organisation and Establishment at Air Head Quarters. 1948 he was promoted to the Rank of Air Commodore and appointed one of the three principle staff officers. In October 1952, he was appointed Air Officer Commanding Operational Command. Will shortly proceed for staff training at the Imperial Staff College in U.K.

These events highlighted the role of merchant navy in war in a more dramatic fashion than ever before in world history. But the experience of other maritime nations, though less sensational, is no less relevant. We all know how, in the absence of an adequate mercantile fleet, India suffered in both wars—she could not get enough ships to carry even the most essential goods; her economy was starved at many points; and for whatever tonnage she was able to hire, she had to pay abnormally high rates of freight. In particular, the Indian public will long remember the dark days of the last war when we lacked the tonnage even to carry foodgrains to the famine-stricken areas and vital war supplies to the Burma front. The country was faced with a grave situation, which threw into bold relief the folly of the short-sighted policy that had so long been pursued, that had denied to India the opportunity to build up an adequate merchant navy of her own. Even the official world could no longer ignore this fact and the need for a basic re-orientation in our shipping policy. The Second Report on Reconstruction Planning issued in 1945 made a refreshingly frank confession:

“The vulnerability of India's position has been revealed by the stress of wartime conditions but by no circumstances more glaringly than by her inability to find adequate shipping from her own resources to provide for the transport of the food supplies required by her. The rectification of this state of affairs should be one of the immediate post-war objectives not only for commercial reasons but also because the development of the Royal Indian Navy necessarily implies concurrent development of the merchant navy.”

This was the case ten years ago. How much stronger is the necessity to develop our own merchant navy today! For meanwhile India has become a free nation, and freedom entails, among other things, the responsibility to end, once for all, our crippling dependence on foreign shipping. If it was unsafe in the past to depend on the shipping of the British Commonwealth, especially in times of a national emergency, how much more so would it be today when independence has thrown the full burden of national defence on our own shoulders! Besides, India is now pursuing an independent foreign policy; neutrality is the cornerstone of that policy; she is determined to avoid entanglement in another war, should there be any. It is therefore all the more

incumbent on us to make a resolute effort to expand our own fleet instead of continuing to depend on foreign lines.

Yet how far we are, even in the eighth year of our independence, from this goal of self-sufficiency in shipping! Look at the following figures which will show at a glance the size of our fleet as compared with that of other maritime nations:

STEAM AND MOTOR VESSELS OF 500 GROSS TONS AND OVER¹

(In millions of gross tons)

U.S.A.	25.98 ²	Denmark	1.47
United Kingdom	17.29	Greece	1.26
Norway	6.31	Canada	1.11
Panama	3.98	Spain	1.07
Italy	3.70	Argentina	0.97
France	3.56	Brazil	0.81
Japan	3.35	Finland	0.67
Liberia	3.21	China	0.57
Holland	3.10	Belgium	0.47
Sweden	2.50	India	0.47
Germany	2.04	Portugal	0.46
Russia	1.70	Honduras	0.43
		Other countries	4.44
Total		90.92	

As you will see from these figures, our merchant fleet is still pathetically small in size. With 470,000 gross tons, or about 0.5 per cent of the total world tonnage, we stand practically at the bottom of the list of maritime nations. This is no more than a fraction of what can be considered to be the indispensable minimum tonnage, both from the angle of national security and of economic needs.

The Reconstruction Policy Sub-Committee on Shipping that was set up by the Government of India had, in its Report of January 1947, put up a vigorous plea for a go-ahead

1. Source: Annual Report of the U. K., Chamber of Shipping for 1954-55. The above figures exclude lake and river tonnage and miscellaneous craft e.g., tugs, trawlers, etc.

2. This excludes merchant-type tonnage owned by the U. S., Army and Navy but includes vessels in the Reserve fleet estimated at 14.25 million gross tons at the end of 1954.

shipping policy. Its recommendations were bold and clear-cut: The entire coastal trade of India should be reserved for Indian flag ships; Indian bottoms should carry 75 per cent of our so-called "adjacent trades" with the neighbouring countries, 50 per cent of our overseas trades, and 30 per cent of the trade in the Orient formerly carried in the vessels of Japan, Germany and Italy, but which they had lost during the war; to achieve these trade targets India would need fleet of 2 million gross tons; a fleet of this size should be built up with in five to seven years.

At the time this Shipping Committee submitted its report, India had only 49 ships with a total of 127,000 gross tons. Its recommendation was tantamount to almost a sixteen-fold increase to be achieved by December 1954 at the latest. Such a target may no doubt look over-ambitious. On the other hand, it cannot be denied that the circumstances were then exceptionally propitious to launch on a bold programme. There was a shortage of world tonnage; three large maritime countries—Germany, Italy and Japan, were out of the field; Liberty and Victory ships were on sale; India had piled up large sterling balances abroad which could be drawn upon to acquire fresh tonnage; she was importing grains on a large scale, which could be carried in her own ships—if enough of them were acquired second-hand; the political atmosphere in India was favourable—there was a genuine, though belated, realisation that it was time to make good the grievous omissions of the earlier years by undertaking a rapid expansion of the Indian fleet. In the circumstances the Shipping Committee's recommendations were not without force and logic.

Given the background of the earlier history of Indian shipping, one should have thought that free India would be particularly concerned with the task of building up her maritime power. But as it happened, immediately after the advent of independence she was plunged into a vortex of troubles—civil commotion, heavy influx of refugees, famine and near-famine conditions, followed by the worst financial crisis since the early thirties. When the first Five-Year Plan was drawn up, there was enough reason to be cautious and circumspect. The main preoccupation then was how to carry through the projects that had already been launched; and, as a result, other targets, particularly those for industries

—and this included shipping—had to be kept down to the minimum. The First Plan fixed a shipping target of only 600,000 gross tons to be reached by the end of March 1956.

After the Shipping Committee's recommendation the First Plan target looked like an anti-climax. For some time there was serious doubt whether even this modest target could be reached in time. Luckily, two measures taken by the Government gave our shipping a much-needed stimulus. First, with effect from the 15th of August, 1951 the entire coastal trade came to be reserved for Indian flag ships, thereby fulfilling a 30 year old public demand. Secondly, the Government decided to extend loans on liberal terms to the Indian shipowners to help them acquire new tonnage. At a time when the capital market was in doldrums and the investing public were unwilling to invest their limited resources in new private enterprises, Government loans remained the only practical means of financing fleet expansion.

Over the last few years there has been a slow but steady expansion of the Indian tonnage, as will be seen from the following figures:

VESSELS OF 150 GROSS TONS AND OVER

	No. of Ships	Gross tons (000)
1949 ((January 1)	83	319
1950 "	93	356
1951 "	92	362
1952 "	100	386
1953 "	111	422
1954 "	124	435
1955 "	125	471

It will be noticed that we are still behind the First Plan target by as much as 129,000 gross tons. Most of the shipping companies, however, have expansion programmes on hand for the immediate future. If these programmes are successfully carried through, we should not be too far behind the target by the end of March next year.

What about the size, age, speed and efficiency of this fleet? Of the total number, 35 are below 1,000 g.r.t. each; 22 are between 1001 and 2,000 g.r.t.; 18 between 2,001 and

5,000 g.r.t.; 24 between 5,001 and 7,000 g.r.t.; and 25 between 7,001 and 9,000 g.r.t. At present we have no vessel with more than 9,000 g.r.t.

As for age, 35 ships, or more than one quarter of the total number, are over 25 years old and should therefore be replaced in the immediate future. In addition, the fleet contains 7 ships which were built between 1930 and 1934, and will therefore be due for replacement within the next few years. These 42 ships account for 92,000 g.r.t. so that the proportion of averaged tonnage is much less in terms of gross tons than would appear from the number of ships involved.

The coastal ships have an average speed of around 9 knots, which is still considered good enough for the coastal trade. For overseas runs, however, considerations of economy call for much faster and larger ships. The India-North America service of the Scindias had to be closed down primarily because the Liberty type vessels employed on this service had a speed of only 10 knots, which proved far too slow and uneconomical on such a long-distance run.

At present our fleet includes only 5 motor vessels; the rest are steamships, of which 53 are oil and 66 coal burners. On the coastal trade coal burners can still function with reasonable economy owing to the fact that enough bunkering coal at a reasonable price is available from Bihar-Bengal coal fields. But on the overseas trade involving long runs coal burners are out of the question, while even oil burners are not as economical as motor vessels. That is why all over the world there is a trend to switch over increasingly from steamships to motor vessels. There is no doubt that in order to increase our participation in the overseas trade, we, too, shall have to follow suit if we are to compete successfully with foreign ships.

How is our fleet employed at present in the various trades? The coastal and adjacent trades are served by 103 ships with a total of 281,000 g.r.t.; of them 21 cargo boats ply exclusively on the short coastal range, that is, between Kandla and Tuticorin, 7 are engaged in the coastal passenger service, 5 serve as passenger-cum-cargo boats while the remaining 70 are employed as cargo carriers in the wider sector range covering the entire coast. The number of ships

plying in the overseas trade stands 27; they have a total of 192,000 gross tons.

Our share in our own overseas trade is still ridiculously low—only 5 per cent of it are carried in Indian flag ships and 95 per cent in foreign bottoms. This is not all. We have no overseas passenger service*—the Scindias used to run a couple of passenger ships between India and the U.K., but this service had to be closed down because of the heavy losses they were incurring and of the unwillingness of the Government to step in and help them with a subsidy. For a maritime country like India to be without an overseas passenger service is unthinkable. It also means that we have to spend foreign exchange handsomely, year after year, on account of the large and growing number of Indians who undertake trips abroad for various reasons.

The total tanker tonnage of the world amounted to 24.5 million gross tons at the end of 1954. But even now India has not got a single tanker of her own! Just consider the implications of this—we are importing 3.5 to 4.0 million tons of oil, all of it is brought in foreign tankers; the three Oil Refineries—two of them are already in operation in Bombay and the third one is going to be set up soon at Vizag, will produce about 3 million tons of petroleum and other products; about one-half of the refinery products may have to be distributed in coastal tankers; yet we do not possess a single tanker to ply even on the coast, and this in spite of the reservation of the coastal trade for Indian nationals! Foreign exchange amounting to a good many crores of rupees is being spent on our tanker trade. Besides, such complete dependence on foreign tankers is not compatible with national security. That it would make our position extremely vulnerable in times of a national emergency goes without saying.

The Second Five-Year Plan is now in the making. What will be the targets for our shipping in the next Plan? To judge from present indications, the Second Plan will aim at a target of 1,045,000 gross tons. This means that the fresh acquisitions will amount to 445,000 g.r.t. plus the shortfall, if any, from the First Plan target of 600,000 g.r.t. plus 90,000 g.r.t., by way of replacing old and obsolete tonnage. The

*A cargo-cum-passenger service between India and Malaya and India and Africa is now operated by the Eastern Shipping Corporation, but only with one ship on each run.

new tonnage is likely to include five coastal tankers as well as three modern high-speed passenger ships for overseas service.

Thus if all goes well, we shall, by the end of March 1961, move about half-way to the target that was fixed on the eve of our independence and that was to be reached not later than December 1954. Such a programme certainly does not err on the side of undue boldness. Even after the Second Plan target has been reached we shall continue to depend on foreign bottoms for, say, 80 per cent of the dry cargo and 100 per cent of the oil cargo in our overseas trade, the bulk of our coastal tanker trade, and the major part of the overseas passenger trade.

Our shipping industry is definitely looking up, but it is still painfully climbing a very gently rising curve. What is the explanation for this, and can the rate of progress be speeded up? We have no doubt it can, provided two basic conditions are satisfied. First of all, there must be the will to build up the merchant navy at a faster rate—here, as in any other big enterprise, this is the first condition of success. We must realise, more fully than hitherto, the risks that we are running and the losses that we are incurring because of our overwhelming dependence on foreign flag vessels; and we must make a determined effort to reduce it drastically.

Second, international shipping is a highly competitive field. Our ships will have to compete with those other maritime nations on the high seas. They will be able to do so only if our Government is willing to do at least as much as the Governments of those other nations have been doing for their own shipping by way of extending subsidies, tax reliefs, interest-free or low-interest loans, reservations of national cargo, and similar other measures. Indeed our Government will have to do more than those of the big maritime nations because: we are late entrants into this field; we have to acquire the tonnage in times of soaring prices; and we shall have to compete with powerful foreign shipowners who have piled up vast tonnage and financial resources through generations of successful shipping.

Lastly, there is the formidable opposition of long entrenched vested interests to reckon with. It can be overcome only when the Government stands solidly behind our

national shipping in such an unequal fight. For the powerful international conferences it has become fashionable to decry any attempt on the part of an under-developed maritime country to build up its mercantile marine; they decry it mostly in the name of so-called "flag discrimination". The interpretation they have come to give to these two words is as sweeping as it is illogical and arbitrary—if you extend any assistance to your national shipping, you are supposed to be discriminating against the flags of other nations. In effect, what they are asking for is unrestricted free competition between, giants and dwarfs: and they are doing so because they know only too well that the dwarfs will never be able to survive it.

If, like other nations, we have the right to protect our land-based infant industries— and who in the mid-twentieth century would deny that right?—surely we have a similiar right to develop our own shipping with appropriate State help. And if we have the right to build up our defence forces in the interest of national security, we have no less a right to build up our merchant navy as an indispensable auxiliary to the army and the navy. The cry of flag discrimination is become increasingly more loud; but it must not be allowed to cloud the issue and to deflect us from the path of our duty.

The duty is crystal-clear: to make up the leeway of generations in this vital field, to build up the maritime greatness of India, to re-capture the position she held among sea-faring nations before the advent of the British rule and the steamship. The time is ripe for a bold shipping policy. Such a policy will indeed yield rich dividends—it will remove one of the major weaknesses in our national defence; it will save tens of crores of rupees worth of foreign exchange every year; it will help forge more intimate ties with the nations on the sea-board of the Indian ocean; it will create, directly and indirectly, hundreds of thousands of jobs for Indians; and it will open up a vast and fascinating field where the spirit of adventure and enterprise of the Indian youth will have free play.

By all tokens, the youth of India is ready to play its part and to meet the big challenge. The nation is waiting only for a bold lead from the top.

MECHANISED MARCH OF TIME

World War II proved that mechanisation was the deciding factor in a battle but this same mechanisation opened up new horizons of difficulties in the shape of various types of fuel and materials being necessary for the varied climatic and ground conditions found throughout the war theatres. Eventually and at no small expense these difficulties were overcome, but an urgent need was still apparent for a vehicle somewhere between the 4 x 4, 5 cwt/4 passenger jeep and the heavy 4 x 4 Weapon Carrier.

The Rover Company Limited in England produced a Utility vehicle which with little or no modification could be quickly changed to a variance of types. Today this vehicle is used throughout the world and has more than often been called the vehicle of a thousand and one uses. The demand is increasing as Armies and Police Forces are standardizing on the Land Rover, production of which has now been stepped up to a 1000 vehicles per week while manufacturing agreements are in operation with Belgium, Germany, France, Australia and South Africa. Assembly Plants are operating in Eire, Canada, Mexico, India, Pakistan etc.

The next development other than the Jet Engine or Gas Turbine which is already available from The Rover Company Ltd., is the conversion from petrol to a diesel unit by the changing over of the cylinder head thus enabling the vehicle to use the most readily available fuel. This vehicle on account of its lasting and hard weather resisting qualities clearly demonstrates the full use to which aluminium and galvanized metal have been put since this completely safeguards the vehicle against climatic deterioration while in storage. Another development is the Rover Turbine Engine which has been reduced to such a minute size that when coupled to a pump can be carried by two men for any distance thereby eliminating the use of a vehicle for fire fighting purposes. These examples of mechanisation improvements are a forecast of things to come.

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